



PSME



WESTERN REGION SAUDI ARABIA JEDDAH CHAPTER

CHARTERED 1995

MOST OUTSTANDING CHAPTER 2005, 2006, 2007, 2011, 2012, 2013 AND 2023

22nd Annual Convention and General Membership Meeting

December 5, 2025 | 8:00AM to 5:00PM

Aluya Hotel, Jeddah KSA

“Innovating for
a Sustainable
Future:
Advancing
Mechanical
Engineering
in the Age
of Smart
Technology”



What's inside?

PSME WRSA JC Events
PME Writeshops and Passers
Messages of our Leaders
Sports Activities
Family Greetings

and more...



MEMBER

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“The beginning is the most important part of the work.” — Plato

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From the Editor's Desk

Hello and welcome! Get ready to dive into the 22nd PSME Souvenir Programme.

This issue is a celebration of the past year—a visual record of the hard work, camaraderie, and accomplishments of the Filipino mechanical engineers of PSME WRSA JC right here in Saudi Arabia.

As the Layout Editor, I'm thrilled to have the chance to shape your reading experience. My team and I have worked hard on every page to ensure this is not just informative, but also visually captivating.

We've used powerful photos of new technology, clear diagrams, and smart graphics to break down even the most complex concepts. We believe that when a magazine looks great, the reading experience is more accessible and a lot more fun! We hope the visual journey through this issue inspires you as much as it did us.

Please don't hesitate to reach out! We genuinely welcome your thoughts and suggestions as we always strive to make the next edition even better.

Sincerely,



Engr. John Ray O. Madla
PME, ACPE, AE, RMP
Immediate Past President
Layout Editor

General Information:

Republic Act No. 8495
An Act Regulating the Practice of Mechanical Engineering in the Philippines

Warmest greetings to everyone!

As the PSME-WRSA Jeddah Chapter proudly marks its 22nd Annual Convention and General Membership Meeting, we celebrate not just another year in our history, but a year defined by passion, purpose, and progress. Steve Jobs once said, "The only way to do great work is to love what you do." This timeless wisdom captures the essence of our chapter's journey—driven by dedication and inspired by the work we wholeheartedly embrace.

The year 2025 stands out as truly remarkable. Our chapter has produced an exceptional number of Professional Mechanical Engineers, the highest professional rank in our field. This milestone reflects our unwavering commitment to uplifting our members, fostering professional growth, and advancing the standards of mechanical engineering. It is a triumph built on the collective spirit, discipline, and unity of our community.

To the 2025 Board of Trustees and to all our outstanding members—a heartfelt salute. Your leadership and perseverance have shaped a year of achievements that will be remembered with pride. Hep hep, hurray! Looking ahead, we open a new chapter guided by a forward-thinking theme:

"Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology." This vision calls on us to embrace innovation, champion sustainability, and strengthen our skills in an era where smart technology transforms every aspect of our profession. Together, we will cultivate a culture of continuous learning and lead the way toward a future that is intelligent, resilient, and environmentally responsible.

As we close this meaningful year, we honor not only our accomplishments but also the unity that defines our chapter. With renewed optimism, we extend our warmest congratulations to the newly elected 2026 Board of Trustees. May your leadership be marked by collaboration, integrity, and a steadfast commitment to excellence. Together, let us continue to soar higher, break boundaries, and shape a legacy that will inspire future generations of mechanical engineers.

Hand salute to all of you engineers!



Engr. Leonard P. Meriales
PME, AE, RMP
IT Director
Editor in Chief

Did you know?

AI is revolutionizing mechanical engineering by enabling predictive maintenance, optimizing designs, and automating processes.

Machine learning algorithms can analyze vast amounts of data to identify patterns and trends, leading to improved decision-making and increased efficiency.

Source: <https://www.infosysbpm.com>

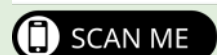


Want to become a PME?

The journey of a Mechanical Engineer is a continuous one of learning and growth. While a degree provides a strong foundation, becoming a Professional Mechanical Engineer signifies a commitment to excellence. It's about demonstrating not just your technical skills, but also your ethical integrity, your ability to lead, and your dedication to public safety. This prestigious designation opens doors to leadership roles, enhances your credibility, and empowers you to make a significant impact on the world. Embrace the challenge, pursue professional licensure, and elevate your career to new heights.

Elevate your engineering career and unlock new opportunities. Our comprehensive workshops, write-shops, and technical seminars provide the ideal platform to prepare for professional licensure.

Visit our website at <https://psme-wrsa.com>.



Theme Rationale

In today's rapidly evolving world, the fusion of sustainability and smart technology has become the cornerstone of modern engineering innovation. The theme "Innovating for a Sustainable Future: Advancing in Mechanical Engineering in the Age of Smart Technology" highlights the crucial role of mechanical engineers in shaping a future that is both technologically advanced and environmentally responsible.

This theme emphasizes the need to integrate smart systems, automation, artificial intelligence, and renewable energy solutions into mechanical engineering practices. By adopting these technologies, engineers can design machines, systems, and processes that are more efficient, adaptive, and Eco-friendly. It reflects a shift from traditional engineering approaches to ones that prioritize resource conservation, carbon reduction, and sustainable production.

Furthermore, the theme recognizes that innovation in mechanical engineering is not only about creating new devices but also about rethinking how technology interacts with people and the planet. It encourages engineers, researchers, and students to explore breakthroughs that will drive progress in industries such as manufacturing, energy, transportation, and robotics—all while ensuring long-term environmental sustainability.

Ultimately, this theme serves as a call to action for the engineering community to lead the transformation toward a smart and sustainable future, where technological advancement goes hand in hand with social and environmental responsibility.



Engr. Noriel J. Nollora, RMEE
Vice President for External Affairs

Convention Logo



Significance of gear.

The main gear is the focal point of designs as it represents Mechanical Engineering core principles. It spotlights design, movement, and functionality, essential for both small robots and big turbines. Key to power and motion, it symbolizes mechanical engineers who turn concepts into functional machines. The name integrates smart technology (circuits) with sustainability (green/leaf), with the central gear highlighting the significance of physical reality and mechanics. Innovative technologies that are smart and sustainable must be rooted in good systems. It combines conventional engineering with intelligent technology. The cog is the core of the logo that highlights that in the "Age of Smart Technology," control over mechanics is the key to innovation.

Circuit

Circuit paths serve as the digital nervous system that connects gear and processes mechanical component information. This spotlights mechatronics, Internet of Things, smart controls, and artificial intelligence automation. The association of mechanical gear with green leaf represents the combination of engineering specializations, indicating that ingenious mechanical devices are possible with sustainability.

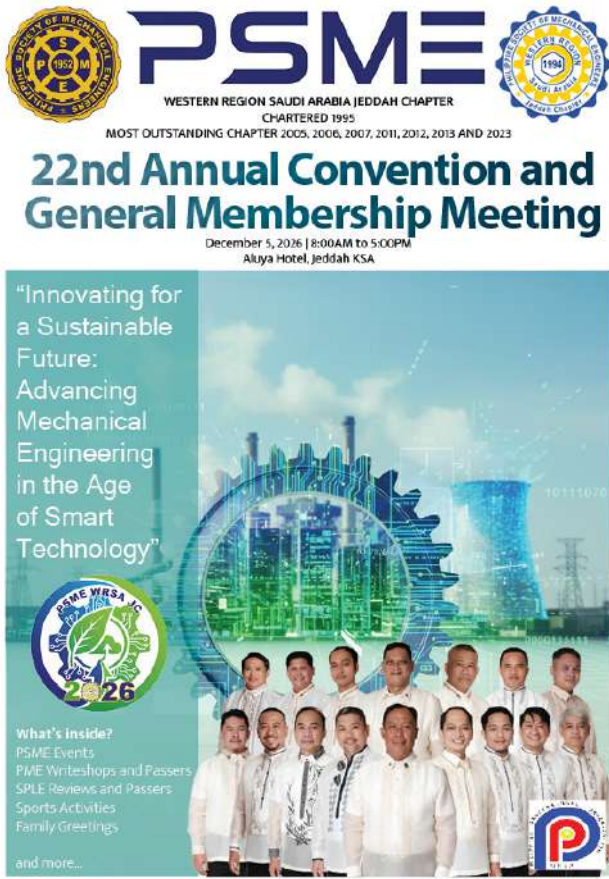
Cloud and The Upward Arrow's Role Across

The upward arrow is to represent moving forward and looking for more advanced solutions, while its circuits represent that it's technology- and analytics-driven. Smart Technology components keep the logo relevant in the 21st century, linking efficiency, optimization, and future progress to smart data use and digital systems.



Engr. John Ray O. Madla
PME, ACPE, AE, RMP
Immediate Past President
Layout Editor

Souvenir Cover



Main title PSME is prominently displayed in large, bold letters. A quote is featured on the left: “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology” is this year’s theme. The 2026 convention logo for the PSME WRSA JC is displayed, incorporating the year 2026 and stylized elements of a leaf and gear, which aligns with the “Sustainable Future” theme. Table of Contents Teaser (“What’s inside?”) on the bottom left hints at the magazine’s content:

This edition prominently featured the incoming Board of Trustees for the year 2026 on the cover of the Annual Convention Souvenir Programme.. They are the ones responsible for the chapter’s incoming activities, including the convention itself, the writeshops, reviews, and community engagement.

The lower part of the background features a recognizable image of an industrial facility, likely a power plant and a large manufacturing complex. This grounds the theme in the traditional domain of Mechanical Engineering. Superimposed over the industrial image is a bright, glowing, futuristic overlay, dominated by Interconnected blue lines and nodes resemble a digital circuit board or a complex network. Faint binary code (0s and 1s) and other digital numbers are visible on the periphery.

The central glowing element has a gear-like or mechanical structure within the digital lattice, bridging the gap between the physical (mechanical) and the digital (smart technology).

The overall effect uses a cool color palette—blues, greens, and white light—against the slightly muted background of the facility. This creates a sense of technology, innovation, and a clean, “sustainable” future.

In essence, the image is a visual metaphor for the event’s theme: the fusion of traditional heavy industry and mechanical processes with modern digital and smart technologies (like IoT, AI, and automation) to achieve sustainability.



Engr. John Ray O. Madla
PME, ACPE, AE, RMP
Immediate Past President
Layout Editor

Did you know?

Where 12,000 BTU/h came from?

The concept originated in the 19th century when buildings were cooled using large blocks of ice harvested from lakes and rivers. The term “ton” (2000 lbs) referred to the actual weight of the ice.

To melt one ton (2,000 lbs) of ice, the total heat absorbed is:

$$2,000 \text{ lbs} \times \text{times } 144 \text{ BTU/lb} = \mathbf{288,000 \text{ BTU}}$$

Since this heat is absorbed over a 24-hour period, the rate of heat absorption is:

$$288,000 \text{ BTU}/24\text{hr} = \mathbf{12,000 \text{ BTU/hr}}$$



1st (1999) Batch of Professional Mechanical Engineer Aspirants (25) from PSME-WRSA.

Row 1 L-R: Kome, M.S., Gercio, D.V., Agulo, F.E., Tan Jr., N.K., Ruiz, W.R., Baculi, RA. Romero, R.V.

Row 2 L-R: Vicedo, J.N., Edris, M.A., Eptise, P., Leancio, W., Aguirre, P.A., Arellano, J. A.

Row 3 L-R: Beckie J. U., Evasco, E. M., Felipe, A.S., Cadiz, B. G., Alcantara, E.

Row 4 L-R: Beotulan, J.L., Lora Jr., D.A., Tornjos, T.R.

NOT IN THE PHOTO: Cepiaso, N.M., Bernales, R.C., Fajardo, F.L, Giray Jr., E. B.

PSME Creed

We, the Mechanical Engineers of the Philippines
Conscious of our responsibilities to God, our Country and Fellowmen
Affirming our adherence to the code of ethics for Mechanical Engineers
Desirous in participating and contributing in the social, economic and industrial growth of our country
Determined to support one organization that shall embrace the mechanical engineering profession
Have resolved to unite to accomplish these aims by constituting a national organization of Mechanical Engineers.

PSME Core Values

I am a person of INTEGRITY. I act with honesty, transparency, and accountability. I do the right things, the right way.

I maintain PROFESSIONALISM at all times with high respect for others, observing proper conduct, following the code of ethics, honoring commitments, and acting fairly and with dignity.

I strive for EXCELLENCE thereby achieving the highest standard of performance in all my undertakings.

I internalize TEAMWORK. I act with sense of urgency, mindful of entrepreneurial spirit and work with unity, cooperation, collaboration, synergy and convergence towards a common goal.

I exercise LEADERSHIP with humility and characterized by stewardship. I lead by example, walk the talk and celebrate success as owned by all the members of the team.

I embody CONCERN FOR STAKEHOLDERS especially the welfare of our members, employees and all we work for and those who work for us.

I am an integral part of a RESILIENT, NATIONALISTIC and GOD-FEARING Organization. I weather the odds and implore peace, harmony, kindness, good work, love of country and social responsibility.

PSME Prayer

Heavenly Father, Maker of Heaven and Earth, we thank You for the Filipino Mechanical Engineer, for our profession, and for our organization, the PSME. You have sown us as seeds, scattered here and abroad as PSME Engineers – humble planners, designers and builders of all things mechanical – our humble testament to the Glory of Your Creation.

We bring before You the fruits of our profession, forged by the fire and burning passion of the PSME mission:

Professionalism – to help us maintain the integrity of the Engineering Profession; please keep our hearts true to the highest ethical principles of our field.

Service – to enable us to contribute to the enhancement of science and technology; we pray for all Filipino Mechanical Engineers to work together as one in shaping the economic growth of our country.

Motivation – to uplift the Engineering Profession; please help us promote fellowship and cooperation among all Filipino Mechanical Engineers and to instill nationalism among PSME members.

Excellence – to enable us to become outstanding PSME members. We pray for all Filipino Mechanical Engineers to actively contribute to the advancement of the profession, to be recognized globally as we develop the talents You have given us.

Help us to provide sustainability to the changing world. May the PSME bring together all Filipino Mechanical Engineers – and as one – stand united as beacons of strength and stability to the world.

All these we pray through You, our Heavenly Father, forever and ever, Amen.

Oath Of Membership

“I, _____ after having been accepted as a member of the Philippine Society of Mechanical Engineers Western Region Saudi Arabia Jeddah Chapter, do hereby solemnly swear, That, I will defend the Constitution and By-Laws of the Society; That, I impose upon myself the aforementioned duties and obligations voluntarily and without reservation or purpose of evasion.

PSME History

The Philippine Society of Mechanical Engineers (PSME) was founded in 1952 with the objective of uniting and enjoining mechanical engineers in the pursuit of further professional growth and in the upliftment of the profession, in general.

The contributions of the Philippine Society of Mechanical Engineers (PSME) to the continued growth of the mechanical engineering profession and technological advancement in the country have made lasting marks as could be glanced from the recognition accorded by both the public and private sectors. PSME has indeed succeeded in living up to its role of upgrading and improving the knowledge of mechanical engineers in the country with its direct assistance in providing solutions to the problems related to the practice of the profession and by continuously educating the members through the conduct of regular plant tours, seminars, and the annual technical paper presentations and invention contests, among others.

PSME has 134 chapters nationwide and 17 international chapters with a total membership of 50k+ fellow, life and associate members. In addition, it has junior units in many schools throughout the country.



Tobias P. Marcelo (1952) The Philippine Society of Mechanical Engineers (PSME) was founded with the objective of uniting and enjoining mechanical engineers in the pursuit of further professional growth and in the uplifting of the profession, in general.



Urbano J. Pobre (1967) January 1, PSME was merged with the Philippine Association of Mechanical and Electrical Engineers (PAMEE), a pioneer technical organization founded in 1930. PSME remained under the umbrella of PAMEE for nine years.



Pedro F. Loresco (1969) The Philippine Mechanical Engineers Code First Edition was published.

Convention Programme

TIME		
8:30 AM - 9:00 AM	REGISTRATION & ACKNOWLEDGMENT OF THE PARTICIPANTS	ADRIAN ZEUS . BITUIN & MARK JOSEPH A. MADOLID
9:01 AM - 9:04 AM	PSME Prayers	GILBERT V. ESPIRITU
9:05 AM - 9:08 AM	Muslim Prayers	JULIUS M. CAÑECA,
9:09 AM - 9:14 AM	National Anthem (Phils. & Saudi)	ZOOM MASTER
9:15 AM - 9:19 AM	HOUSE RULES	MODERATOR
9:20 AM - 9:25 AM	FORMAL OPENING OF THE 22 nd ANNUAL CONVENTION AND WELCOME ADDRESS	JOBERT M. DE LA ROSA (Convention Chairman)
9:26 AM - 9:36 AM	KEYNOTE SPEAKER Introduction of Keynote Speaker Message of KEYNOTE SPEAKER Awarding of Plaque of Appreciation	LEONARD P. MERIALES RODOLFO SEREDRICA (2026 PSME National President-Elect) MODERATOR
9:37 AM - 10:41 AM	1 st TECHNICAL PRESENTATION Introduction of Technical Speaker TECHNICAL SPEAKER Question & Answer Awarding of Plaque of Appreciation	ANTHONY C. BUGAYONG JOEL N. CADIANG “Inherently Safer Design of Chemical Plants” MODERATOR MODERATOR
10:42 AM - 10:51 AM	1 st Raffle Draw: Consolation and 2 nd Major Raffle	JULIUS M. CAÑECA
10:52 AM - 11:56 AM	PRODUCT PRESENTATION by Introduction of Product Advertiser PRODUCT PRESENTER Awarding of Plaque of Appreciation	OPTIMAK MODERATOR AHMET KULAK - GLOBAL RELATION AND KEY ACCOUNTS MANAGER MODERATOR
11:57 AM - 12:01 PM	2nd Raffle Draw: Consolation and 1 Major Raffle	JULIUS M. CAÑECA
12:02 PM - 1:16 PM	LUNCH BREAK / VIDEO PRESENTATION	
1:17 PM - 1:47 PM	PRODUCT PRESENTATION by Introduction of Product Advertiser PRODUCT PRESENTER Awarding of Plaque of Appreciation	CROWN TECHNICAL SERVICES MARK HAROLD A. RAMIREZ AZAM AHMED - PROJECT MANAGER MODERATOR
1:48 PM - 2:08 PM	PROFESSIONAL MECHANICAL ENGINEER PRIMER PRESENTATION Introduction of Technical Speaker TECHNICAL SPEAKER Question & Answer Awarding of Plaque of Appreciation	ALEX I. TAM ENGR. NAPOLEON M. CEPRIASO MODERATOR MODERATOR
	GENERAL MEMBERSHIP MEETING & INDUCTION OF 2026 BOT's	
2:08 PM - 2:11 PM	PSME CREED	ZOOM MASTER
	PSME CORE VALUES	ZOOM MASTER
2:15 PM - 2:25 PM	CALL TO ORDER PROOF OF ATTENDANCE AND DECLARATION OF QUORUM PRESENTATION & ADOPTION MEETING AGENDA	ORLAN C. MORIONES JOHN-JOHN SOLAM
3:05 PM - 3:15 PM	READING & ADOPTION OF PREVIOUS MINUTES OF MEETING	JOHN-JOHN SOLAM
3:16 PM - 3:26 PM	PRESIDENTS ANNUAL REPORT	ORLAN C. MORIONES
3:27 PM - 3:37 PM	OFFICERS/ DIRECTORS REPORT Financial Report Membership Director's Report	DIRECTORS ADRIAN ZEUS R. BITUIN MARK JOSEPH A. MADOLID
3:38 PM - 3:48 PM	INSPIRATIONAL SPEAKER Introduction to the Inspiration Speaker Message of the Inspiration Speaker Awarding of Plaque of Appreciation	ANTHONY C. BUGAYONG VPME PASCIANO DEFENSOR MODERATOR
3:49 PM - 4:04 PM	GUEST OF HONOR Introduction to the Guest of Honor Message of the Guest of Honor Awarding of Plaque of Appreciation	NORIEL J. NOLLORA JULES PATRICK A. AGUILA - Vice Consul and Administrative Officer MODERATOR
4:05 PM - 4:10 PM	B R E A K	
4:11 PM - 4:26 PM	PRESENTATION OF THE 2025 BOARD OF DIRECTORS AND THEIR DISCHARGING TO OFFICE	JOHN RAY O. MADLA (COMELEC Chairman)
4:27 PM - 4:42 PM	PRESENTATION OF THE 2026 BOARD OF DIRECTORS AND THEIR CHARGING TO OFFICE	Vice Consul and Administrative Officer”
4:43 PM - 4:58 PM	INDUCTION OF THE 2026 BOARD OF TRUSTEES	Consul and Administrative Officer
4:59 PM - 5:14 PM	TURN-OVER CEREMONIES: 2025 CHAPTER PRESIDENT TO 2026 CHAPTER PRESIDENT	ORLAN C. MORIONES & JOBERT M. DE LA ROSA
	ACCEPTANCE SPEECH OF THE 2026 CHAPTER PRESIDENT	JOBERT M. DE LA ROSA (Incoming President 2026)
5:15 PM - 5:20 PM	OTHER MATTERS & ANNOUNCEMENTS	LEONARD MERIALES
5:21 PM - 5:24 PM	ADJOURNMENT	ORLAN C. MORIONES
5:25 PM - 5:35 PM	PRESENTATION OF CHAPTER AWARDEES	ORLAN C. MORIONES ANTHONY C. BUGAYONG NORIEL J. NOLLORA ADRIAN ZEUS R. BITUIN / JULIUS M. CAÑECA ORLAN C. MORIONES (Outgoing President 2025) NAPOLEON M. CEPRIASO
5:36 PM - 5:51 PM	CONSOLATION AND GRAND RAFFLE	
5:52 PM - 5:55 PM	CLOSING REMARKS	
5:56 PM - 6:01 PM	PHOTO OP	

Moderator : JOHN-JOHN SOLAM
Zoom Master : OLIVER O. SALAZAR

THEME: “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology”

Through The Years



Western Region Saudi Arabia
Jeddah Chapter
Chartered 1995

Brief History

The Philippine Society of Mechanical Engineers - Western Region Saudi Arabia Jeddah Chapter (PSME-WRSA) was started and headed by Nildo K. Tan, Jr., PME, FPSME, a member of the Philippine Society of Mechanical Engineers Saudi Arabia Chapter (PSME-SA) in Dammam. During his assignment in Jeddah, he was tasked to form the PSME-WRSA in Jeddah, being the Director of Autonomous Provincial Unit (APU). The objective was to promote excellence in the practice of mechanical engineering profession among the Filipino mechanical engineers in the Western Region of Saudi Arabia, and to provide a venue for enhancing professional competence, brotherhood, inter-action and camaraderie among its members.

REMINISCENCES THROUGH THE YEARS

1993

- Initially, only a handful of mechanical engineers coming from various companies and business establishments in Jeddah showed interest to join.
- 30 Registered Mechanical Engineers was the basic requirement by the PSME National to become an independent chapter.

1994

- The required 30 Registered Mechanical Engineers was attained and the application to become an independent chapter was formally endorsed by PSME-SA Chapter to the PSME National.
- Subsequently, Nildo K. Tan, Jr., PME was elected as the first Chapter President.

1995

- The term of Engr. Ruben Parpan has formally received the charter approval PSME-WRSA Jeddah Chapter from PSME National as an independent chapter.
- Nildo K. Tan, Jr., PME was automatically named as the Charter President.

1996 and 1997

- During the presidency of Engr. Rene Y. Logarta and Engr. Rene C. Bernales, PME, respectively, PSME-WRSA formulated its constitution and by-laws identifying areas of responsibilities, social awareness campaigns, plant visits, technical seminars, membership growth, and sports activities.
 - The first PSME-WRSA sports fest was sponsored by Advance Petroleum Services Limited-Gulf Oil courtesy of Charter Pres. Nildo K. Tan, Jr.



Be the best in whatever you do

1998

- Pres. Danilo V. Gercio, PME and the BOD conceived the idea of board exams here in Jeddah for non-registered mechanical engineers and plant mechanics.
- Documentation and communications with the PSME National Office and the Professional Regulation Commission (PRC) was initiated.
- Rizalino Nobleza, PME spearheaded the first M.E. Board Exam review at IPSJ, Jeddah.
- The birth of PSME-WRSA's newsletter, "Jeddah Prime Movers" was successfully launch with this first issue. Thanks to the efforts of Ruben B. Serrano, PME, and Dionisio A. Lora Jr., PME together with the contribution from all members.
- PSME-WRSA Jeddah Chapter received a Presidential Award from PSME National's 46th Annual Convention held in Cebu, Philippines on October 22, 1998.



Technology is a useful servant but a dangerous master. - Christian Lous Lange

1999

- The term of Filemon E. Agulo, PME, was considered a year of fulfillment. Plans and preparations of his predecessors became a reality.
- The first Professional Mechanical Engineer (PME) board examination took place in November 20, 1999. PRC representatives together with BME members came to Jeddah and conducted the examination. Some associate members took the Mechanical Engineers board exam in Dammam.
- Another Presidential Award was received by PSME-WRSA Jeddah Chapter from PSME National's 47th National Convention on October 22, 1999.



True success is measured by the positive change I leave in the world.

2000

- The millennium president Wilfredo R. Ruiz, PME made substantial achievements.
- The Professional Regulation Commission (PRC) conducted the 1st Mechanical Engineers board exam and the 2nd Professional Mechanical Engineers board exam in Jeddah on July 2000.
- Pres. Willy was awarded Outstanding Chapter President.
- Felimon E. Agulo, PME was awarded as The Outstanding Mechanical Engineer (TOME), Consultancy category.
- Edwin M. Evasco, PME and Mohd. Pedro D. Entico, PME was awarded Most Outstanding Member and Most Outstanding Committee Chairman, respectively.
- PSME-WRSA got a Presidential Award at PSME National's 48th Annual Convention in Cebu, Philippines on October 20, 2000.



Try not to become a man of success, but rather become a man of value. - Albert Einstein

2001

- The presidency of Dionisio A. Lora Jr., PME marked another milestone

with notable achievements and projects.

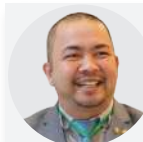
- The 1st board exam for Certified Plant Mechanic (CPM) was conducted and the 2nd board exam for ME took place in Jeddah and Dammam.
- PSME-WRSA sponsored two deserving scholars who took 2-year vocational course.
- The formation of APU Riyadh for chartering was initiated.
- PSME-WRSA received a Presidential Award at PSME National's 49th Annual National Convention on October 19, 2001.



"All our dreams can come true if we have the courage to pursue them." □ □ Walt Disney

2002

- Pres. Juan U. Berbie, PME continued the implementation of the two students' scholarship from Region 11 and Region 4 under the supervision of DSWD.
- Formation and chartering of PSME-WRSA Toastmasters Club 6899 on March 5, 2002 by Toastmasters International, USA. Ricardo V. Romero, PME was the first elected Club President with 22 charter members.
- Recommendation was done to the PSME-National for the chartering of PSME-WRSA APU-Riyadh with more than 30 regular members.
- Napoleon M. Cepriaso, PME got The Outstanding Mechanical Engineer (TOME) award for Special Category in Environmental Engineering.
- PSME-WRSA Jeddah Chapter got the Most Outstanding Chapter for Membership Growth.
- Ricardo V. Romero, PME was awarded as the Most Outstanding Committee Chairman.
- PSME-WRSA Jeddah Chapter received a Plaque of Recognition during PSME National's 50th Annual Convention in Manila on October 19, 2002.



"Success is not the key to happiness. Happiness is the key to success. If you love what you are doing, you will be successful." □ □ Albert Schweitzer

2003

- Pres. Orlando L. Digma, PME faced many challenges in his term.
- The Autonomous Provincial Unit (APU) Riyadh was chartered by PSME National. The Induction of the Board of Directors was held in 28th February 2003 in Riyadh and IPP Juan U. Berbie, PME represented the PSME-WRSA Jeddah Chapter.
- The Chapter's first-ever scholar from Region 11 has successfully completed his studies in October 2003.
- Julio D. Caringal, PME and Wilfredo R Ruiz, PME were awarded as The Outstanding Mechanical Engineers (TOME) for Consultancy and Special Category in Automation and Controls, respectively, during the 51st PSME-National Annual Convention held in Manila.



"Success is built on resilience, not luck. I choose to rise every time I fall." □

2004

- The second term of Pres. Wilfredo R. Ruiz, PME, reminded us of how important camaraderie is, for the good and strengthening of any organization.
- Engr. Jose Emmanuel B. Acebuque was awarded The Most Outstanding Member at PSME National's 52nd Annual Convention in Manila.



"The best way to predict the future is to create it." □ □ Peter Drucker

2005

- Pres. Ernesto C. Cala, PME made momentous accomplishments.
- Ernesto C. Cala, PME was awarded as The Outstanding Mechanical Engineer (TOME) for Special Category in Automatic Energy Management and Controls System.
- PSME-WRSA Jeddah Chapter was awarded the Most Outstanding Chapter for the year 2005.
- PSME-WRSA received a Plaque of Recognition at PSME National's 53rd Annual National Convention on October 19, 2005.



"Success is not a great leap forward, but a series of small steps and advances." □

2006

- The term of Pres. Willie C. Leoncio, PME was a dream come true for succeeding with their mentoring of Jeddah Electrical Engineers organization of their newly established Toastmasters club.
- PSME-WRSA Toastmasters Club successfully conducted the Youth Leadership Training joined with the International Philippine Schools of Jeddah.
- PSME-WRSA once again received the Most Outstanding Chapter Award and a Plaque of Recognition at the PSME National's 54th Annual Convention on October 24, 25 & 26, 2006.



"Success is where preparation and opportunity meet." □ □ Bobby Unser

2007

- The presidency of Pres. Joselito A. Arellano, PME had been very fruitful.
- Pres. Lito was awarded the Most Outstanding Chapter President.
- Engr. Rainier P. Patawi was awarded The Most Outstanding Member.
- PSME-WRSA received The Most Outstanding Chapter Award at PSME National's 55th Annual Convention.
 - A mid-year thanksgiving party and fellowship was conducted to celebrate the fruitful and successful midyear activities of the Chapter.
 - Continued board review for the ME and CPM examinees headed by the Professional Enhancement Director Julio D. Caringal, PME for the incoming SPLBE-SA of December 2007.



"A wise man will make more opportunities than he finds." — Francis Bacon

2008

- Under the leadership of Pres. Froilan G. Miro, PME the chapter made notable achievements.
- Napoleon M. Cepriaso, PME conducted the Project Management seminar during the Midyear Convention. Followed by Wilfredo C. Leoncio, PME who conducted a seminar and product presentation on Daikin Air Conditioning Technological Advancement.
- Under the responsibility and commitment of Engr. Julio D. Caringal, PME, determined PME examinees passed the examination; Engr. Jose Emmanuel B. Acebuque, Engr. Ruben Alzate and Engr. Edilberto Cabodil. The Oath-taking was held during the 9th PSME-WRSA's Annual Convention on November 28, 2008.



"A wise man will make more opportunities than he finds." — Francis Bacon

2009

- Pres. Julio D. Caringal, PME was determined to maintain the good performance of the chapter.
- Professional Enhancement Director Emmanuel B. Acebuque, PME headed the review preparation for the incoming SPLBE.
- Dionisio A. Lora, Jr., PME was awarded as TOME (The Outstanding Mechanical Engineer) in Hotel Engineering category.
- Pres. Julio conducted seminars on HVAC Design Part 1 and HVAC Design Part 2 and distributed a workbook he authored entitled "Cooling and Heating Load Calculation Manual".
- Overview of Project Management seminar was conducted by Engr. Henry Cabansag, PMP.
- PSME-WRSA Toastmasters Club under the Presidency of Engr. Jaime L. Leviste, CC, CL garnered some awards from Toastmasters International.



"If it moves, it's mechanical □ if it works, it's genius. □"

2010

- Chapter President Joselito L. Bentulan, PME had to realign the chapter to where it has been heading since the chapter was chartered 1995.
- As an executive order E0-835 was signed by the Philippine President Gloria M. Arroyo on 06 October 2009 declaring that Special Board Examinations (SPLBE) is going to be conducted by the Professional Regulation Commission of the Republic of the Philippines, in the Kingdom of Saudi Arabia yearly. The founding of Jeddah Review Center by Wilfredo Ruiz, PME was recognized by the chapter to handle the review classes for BS of Mechanical Engineering graduates.
- In order for the chapter to focus more of its activities to the benefits of general membership, it was on this term where history transpired that the past presidents of PSME-WRSA Jeddah Chapter were to hold positions such as: Wilfredo Leoncio, PME- Auditor and Ernesto C. Cala, PME - Code of Ethics Director: to fill the vacuum created by non-availability of PSME-WRSA membership to hold such positions.
- The Council of Past Presidents of PSME-WRSA, Jeddah Chapter was organized to support the PSME-WRSA, Jeddah Chapter officers and Board of Directors in advisory level, initially chaired by the Charter President Nildo K. Tan Jr., PME.
- The collective efforts of 2010 PSME-WRSA administration was rewarded with the following national awards: 1. Most Outstanding Chapter in Membership Growth. 2. Most Outstanding Chapter Project. 3. Most Outstanding Committee Chairman for Engr. Jeffrey Esperanza.



"Success is not final; failure is not fatal: It is the courage to continue that counts. □ □ Winston Churchill"

2011

- Pres. Rainier P. Patawi, ME shared his version of four (4) P's for the chapter's successful accomplishments: Planned purposely, Prepared prayerfully, Proceeded positively and Pursued persistently.
- The chapter made record-breaking number of National Awards from PSME National's 59th Annual Convention at Quezon City, Philippines on October 21, 2011 as follows: Most Outstanding Chapter- International;

Best Chapter in Membership Growth; Most Outstanding Chapter Project - "Bayanihan Spirit for Flood Victims in Philippines"; TOME Award for Napoleon M. Cepriaso, PME in Construction category; TOME Award for Rainier P. Patawi, ME in Information Technology category; Nildo K. Tan, Jr., PME for the Fellow Award; and Pres. Rainier was awarded Most Outstanding Chapter President- International.

- Oath-taking of new Licensed Mechanical Engineers: Engr. Antonio H. Amosco Jr., Engr. Liza L. Acosta and Engr. John E. de Leon at Al Waha Hotel, Jeddah.



"I prefer that I have it and not use it, than I want to use it but I don't have it. □ On having a PME license."

2012

- Pres. Napoleon M. Cepriaso, PME led the chapter during its darkest year. Despite the imminent threat to its existence, it managed to move forward with programs and seminars to enhance the technical knowledge and skills of the members.
- PSME-WRSA Jeddah Chapter has set a benchmark of excellence in community service.
- Set another record-breaking number of national awards (12 awards out of 14 nominations) from the PSME National's 60th Annual Convention in Quezon City, Philippines on October 19, 2012.
- Pres. Nap got The Most Outstanding Chapter President - International Award.

- The chapter for The Most Outstanding Chapter – International.
- Most Outstanding Chapter in Membership Growth.
- Most Outstanding Chapter Project - Operation "Habagat".
- Most Outstanding Publication - Jeddah PriME MoVer's Newsletter.
- TOME (The Outstanding Mechanical Engineer) Awards for: Joselito L. Bentulan, PME in Manufacturing category; Roel Alfon G. Banawis, ME in Design category; Ace Glen B. Garcia, ME in Consultancy category; Crisostomo C. Ortiz, PME in Community Service category.
- Achievements and Service Awards for: Wilfredo R. Ruiz, PME for Fellow Award; Lee I. Bonifacio, ME as Outstanding Secretary; and, Jemuel B. Esguerra, PME as Most Outstanding Committee Chairman



"The road to success and the road to failure are almost exactly the same. □ □ Stephen Covey"

2013

- Pres. Jaime L. Leviste was one of the most active officers who served the chapter. He Offered the lecture room of New Al Jedaani Hospital for the chapter's technical seminars and other activities.
- PSME-WRSA Toastmasters club mentored Jotun Toastmasters Club and continued the Youth Leadership Training Program to International Philippine School of Jeddah and Al Hekma International School.
- Pres. Jimmy. with Membership Director Jemuel B. Esguerra, PME met with the PSME National president in Scout Bayoran, Quezon City to seek important advice on chapter's status.
- PSME-WRSA Jeddah Chapter garnered the following National Awards from the directorate of PSME Scout Bayoran: Most Outstanding Overseas Chapter; Most Outstanding Chapter President for Engr. Jaime L. Leviste; Special Technical Competency Award; Special Humanitarian Award (for raising donation to the victims of Typhoon Yolanda).



□In every piece of adversity there is an equal opportunity□

2014

- Pres. Crisostomo C. Ortiz, PME continued to lead the chapter through its rough journey. Despite the odds, PSME-WRSA remained intact and committed to community service.
- Achievements and activities for this year were: Money donation to children of Santa Veronica, San Pablo City with Engr. Jaime L. Leviste and Engr. Lee I. Bonifacio; Conducted Basketball Tournaments; Technical Seminar on General Machine Design/ Parliamentary Procedure by Engr. Lorenzo O. Gaviola and TM Edgar Hernandez, respectively; Participated at KAMC Invitational Bowling Tournament; Mid-Year Convention and Technical Seminar on Design of Water Distribution System by Jemuel B. Esguerra, PME; Seminar on DSLR - Understanding Its Basic Operation by Napoleon M. Cepriaso, PME; Coastal Clean-Up Drive at Bohayrat Spearheaded by APO; Plant Tour at Al Hidada Galvanizing Plant; Technical Product Presentation by DUCT Sox.



□The starting point of all achievement is desire.□- Napoleon Hill

2015

- Pres. Ruben B. Serrano, PME demonstrated exemplary leadership at this time when PSME-WRSA has hibernated and going through transformation.
- When PSME National was divided, PSME-WRSA Jeddah Chapter was delisted.
- Despite being delisted, Pres. Ruben continued the negotiation with the PSME National officers in Paredes to recognize the chapter.
- Various activities were conducted to keep the membership alive: Participation in All-Star Bowling and PPO Bowling; General Membership Meeting; Al-Khattan get-together; Toast for PP Lito L. Bentulan, PME; Philippine Independence Day Celebration at PCG; and, Wow Pinoy Bowling Fun Game.

2016

- For the second year, Pres. Ruben B. Serrano, PME lead the chapter.
- To give full service and benefits for the members, the chapter was chartered for the 2nd time as PSME-JWR in March 4, 2016 at Trident Hotel by PSME National-Paredes under Pres. Murry Demdam. It became the 89th chapter of PSME. Dr. Ed Malagapo conducted the oath-taking of officers and BODs as well as the chartering, graced by the presence of Vice-Consul Alexander Joseph A. Estomo. Sponsors: EGPIL and TEAMAC Arabia.
- Pres. Ruben automatically became the charter president and first president of PSME-JWR (Jeddah Western Region).
- The chapter's website www.psme-iwr.org was officially launch in May 7, 2016 thru IT Director, Engr. Paulo Taruc.
- First issue of official e-newsletter, Jeddah PrimeMovers, under PSME-JWR was issued in August.
- Conducted the following technical seminars: Press Tool Design by Ruben B. Serrano, PME; Heating, Ventilating, and Air Conditioning (HVAC) Design by Engr. Jemuel B. Esguerra, PME; and Operation and Maintenance of a Rotating Equipment by Engr. Chris Ortiz, PME.
- Participated in Invitational bowling tournaments by GBI and KAMC.
- Collaborated with other civic organizations to help distressed OFWs of Saudi Oger.
- National awards at 64th PSME Annual Convention in Manila, October 19-22, 2016: Fellow Award to Napoleon M. Cepriaso, PME; TOME Award (Special Category: Biomedical) to Engr. Jaime L. Leviste; Best Website

Award to www.psme-jwr.org; and, Most Outstanding Project to PSME-WRSA Toastmasters Club 6899.



*□Believe you can and you're halfway there.□
- Theodore Roosevelt*

2017

- Pres. Elmer Quanico had turned a new leaf as the chapter continued the list growing of activities and achievements. He was the 2nd president of PSME-JWR.
- Conducted seminars and technical presentations as follows: Fire Alarm System Design and Application by Wilfredo R. Ruiz, PME, FPSME; Project Management Basics for Engineers and Technicians by Napoleon M. Cepriaso, PME, FPSME; Solar Energy System Application by Engr. Yamen Mohamed Samir Al Akeel of ICONS;
- National Awards garnered: Fellow Award for Wilfredo R. Ruiz, PME, FPSME; TOME Award for Engr. Ruben Serrano, PME.
- Board Exams passers: Engr. Jemuel B. Esguerra and Engr. Joel A. Santos, Professional Mechanical Engineers; and, Engr. Michael James C. Arcaparas, Mechanical Engineer.
- Sports and community activities: PPO Yearend Bowling Tournament (2nd Place); MRRD-OFW Bowling Tournament; KAMC Bowling Tournament (7th Place); PPO Bowling Tournament; and, participated in the Feeding and Relief Program for unfortunate OFWs in Saudi Oger Co.



□Whoever you are, be a good one□

2018

- Pres. Jemuel B. Esguerra, PME became the 3rd President of PSME-JWR and continued the legacy of the chapter.
- Conducted the following CPD-approved seminars: 5S Workplace Organization Process and TPM - Process for Improving Equipment Effectiveness (8 points); Project Management Basics for Engineers and Technicians Part-2 (8 points); Introduction to Auto Cad and Elevator Technology (4 points); Automatic Fire Protection System Design (8 CPD points); and, Sewage Lifting Station (8 points). Design and Application of HVAC DDC Controls and Building Management System (8 points); and, 3rd Annual Convention and General Membership Meeting (8 points).
- Continued the program for ME members to upgrade their license to PME. Two workshops were conducted accordingly.
- Actively participated in the activities of Philippine Professional Organization Western Region Saudi Arabia (PPO-WRSA) with the Philippine Consulate General; Meet and greet for our new Consul General Edgar Badajos; Meeting with DOLE-OWWA at PCG; assistance to the examinees of the Special Licensure Exams and many more.
- Sports activities: Basketball friendly game at Escuela De Espanyol; Joined a basketball league with our team name "PrimeMovers".
- PSME-JWR achievers: Engr. Noel Bitera and Engr. Crisostomo Ortiz, professional mechanical engineers; and, Engr. Arnel Layug, registered master plumber.
- National awards garnered: Engr. Elmer B. Quanico, The Outstanding Mechanical Engineer (TOME) Special Category Household Refrigerating Appliances; and, Engr. Aldrin Alizon D. Lango The Outstanding Mechanical Engineer (TOME) Special Category - Advanced Cooling System.



*□The only limit to our realization of tomorrow will be our doubts of today.□
- Franklin D. Roosevelt*

2019

- Engr. Noel S. Bitera, PME became the 4th President of PSME-JWR but has tendered his resignation from the position effective March 1, 2019 to take rest due to health condition and to reduce stress for his healing process. Engr. Aldrin Alizon D. Lango, the elected Executive Vice President, by virtue of succession, became the Chapter President.
- Engr. Aldrin Alizon D. Lango also became the Vice-President for PPO WRSA.
- On February 6, a Board Resolution dated January 30, 2019 was forwarded to PSME National under the leadership of Interim National President Dr. Jeffrey Singson with the title "A BOARD RESOLUTION EARNESTLY REQUESTING THE PSME NATIONAL TO REACTIVATE "PSME WRSA JEDDAH CHAPTER" AS CHARTERED IN 1995 INCLUDING ALL OF ITS ACHIEVEMENTS, RECOGNITIONS AND ACCOMPLISHMENTS AND MERGED WITH "PSME-JWR" AS CHARTERED IN 2016 INCLUDING ALL OF ITS ACHIEVEMENTS, RECOGNITIONS AND ACCOMPLISHMENTS". During the 2nd National Regular Board Meeting held on February 9, 2019 at the PSME Building, Sgt. Bayoran St, Bgy. South Triangle, Quezon City, the Interim Board of Directors thru its Board Resolution 2019-31 has approved the resolution. On June 9, 2019 the formal letter regarding the approval of the resolution was received.
- Technical Seminars Conducted were: "Communication, Leadership Skills & Wealth Management" by DTM Joey Villanueva (32 CPD points); "PME, AER, AET Orientation Seminar" by Lorenzo O. Gaviola, ME, Crisostomo C. Ortiz, PME, and Lee I. Bonifacio, ME; and "Basic Design of Firefighting System (Wet Pipe Sprinkler) by Engr. Roseller A. Junsay Jr.;
- The Chapter had Plant Tours and Process Presentations in: Saudi Refrigerator Manufacturing Company Factory on "Familiarization & observation of refrigerator manufacturing process"; and Friesland Campina Middle East Factory on "Milk Production Process"
- A Thanksgiving and Get-together was held in Al Qattan Village Beach Resort. It was also highlighted by the "Last Toast" for the PSME-JWR Charter President, Ruben B. Serrano, PME.
- Our Chapter also participated in different activities of the Philippine Professional Organization-Western Region Saudi Arabia (PPO-WRSA); we have assisted in the conduct of SPLE 2019 at Ibn Sina Medical College; and more.
- The Chapter have also participated in some activities that the Philippine Consulate General of Jeddah; Have attended first ever State of Post Address by the Hon. Edgar B. Badajos last December 6, 2019; and more.
- 2019 PSME-WRSA JC achievers: Engr. Willyn D. Espino, Engr. Lee I. Bonifacio, Engr. Joel Amos A. Acosta, and Engr. Liza L. Acosta as First Batch of ASEAN Engineers. Engr. Maria May M. Atole and Engr. Napoleon M. Castañeda as SPLE 2019 Passers in Registered Master Plumber.



If God had not wanted us to reach the stars, He wouldn't have blessed us with the power to dream.

2020

- Conducted ASEAN Engineering Register Technical Writeshop on February 7, 2020. The writeshop Technical Speaker was the PTC MENA Deputy in the Western Region, Engr. Richard R. Garcia, PECE, APEC Eng., ACPE, FACPE, AE.
- The Chapter's operations were on hold for almost three months due to Covid-19 pandemic but the Board of Directors led by Engr. Aldrin Alizon D. Lango persevered. The Chapter was able to discharge its functions while observing the health protocols through the virtual platform "Zoom".
- The Chapter was able to organize technical Webinars on: "The Role of BIM in Sustainability, Energy and Environment" by Ace Glen

- Garcia, Mechanical Designer & Energy Modelling Lead, Canada; "PME Orientation and Writeshop" conducted by Engr. Napoleon M. Cepriaso, PME, FPSME; "Autonomous Maintenance" by Engr. Greg A. Gulmatico.
- Conducted a "Virtual Membership Kamustahan" on August 14, 2020 in order to assess the current status of our general membership.
- For the first time in the history of PSME-WRSA Jeddah Chapter, the constitution and By-Laws (CBL) was ratified by the general membership during its Mid-Year General Membership Meeting on August 28.
- Extended assistance to our fellow Filipinos in the Philippine Consulate General in Jeddah male and female wards on September 18, 2020.
- Organized the first Virtual Plant Tour in Reza Hygiene Plant and Election of Year 2021 BODs on October 2, 2020.
- 2020 Achievers were: Engr. Maria May M. Atole, Engr. Napoleon M. Cepriaso, Engr. Aldrin Alizon D. Lango, Engr. Jose Melvin D. Santos, Engr. John Ray O. Madla, Engr. Leonard P. Meriales, Engr. Orlan C. Moriones, Engr. Crisotomo C. Ortiz, Engr. Oliver O. Salazar and Engr. Antonio Elmer L. Quintilla as second Batch of approved ASEAN Engineers



*A DREAM written down with a date becomes a GOAL
A GOAL broken down into steps becomes a PLAN
A PLAN backed by ACTION becomes REALITY*

2021

- In the midst of the pandemic with eased health protocols, on January 7 and 8, 2021, Engr. Lee I. Bonifacio led the Chapter's thanksgiving get-together in a beach resort at Obhur with a successful annual planning of activities.
- PSME-WRSA JC CBL was amended to serve the growing number of members in the Philippines who desired to keep their membership with WRSA Jeddah Chapter. Chaired by our Code of Ethics Director Engr. Noriel Nollora. The proposed CBL amendment was approved by the Board of Directors last November 2, 2021 and due for ratification.
- Three (3) of our members were virtually conferred last April 10, 2021 during the 2021 ASEAN Engineering Register Conferment Ceremonies 2021-02 and ten (10) of our members were conferred in a hybrid set up last July 16, 2021 in collaboration with Institute of Electronics Engineers of the Philippines, Inc – KSA WRC during the 2021 ASEAN Engineering Register Conferment for Western Region of Saudi Arabia by the Philippine Technological Council.
- Our chapter actively participated in the 12th Middle East Regional Conference hosted by PSME-UAE Chapter. It was concluded on October 8 and 9, 2021. We actively participated and attended the 69th NatCon activities.
- Our Mid-Year General Membership Virtual Conference was conducted last June 25 and successfully chaired by Engr. Nino Jose A. Lopez. Graced by PSME National leaders and BME Chairman Leandro A. Conti as the Guest of Honor.
- "Jeddah Prime Movers" the official newsletter of PSME-WRSA JC was relaunched and able to release 2 Issues of Volume 16.
- The chapter had two batches of Plant Tour Saudi Dairy and Foodstuff Company (SADAFSCO) Ice Cream factory in Phase 1 of Industrial City 1 led by Engr. Roy Tumamak and our associate member Mr. Elmer Quintilla.
- Our Chapter representatives actively participated in all PPO-WRSA activities. As a member organization, we led the ventilation enhancement program of the female ward of Bahay Kalinga at the Philippine Consulate General - Jeddah.
- We had conducted the following technical webinars in order to support the chapters' continuing professional development of its members and other professionals: 1. "Future-Proof Buildings for the Changing Climate" by Engr. Ace Glen Garcia; 2. "Boiler Safety Procedure and Maintenance" by Engr. Crisostomo Ortiz, 3. "Elevator Design and Standards" by Engr. Lorenzo Gaviola, and 4. "Solar Photovoltaic

Grid Interactive Design” by Engr. Ahmed Selim; 5. “Refrigeration and Air-conditioning Hybrid Workshop” by Engr. John Ray Madla; 6. “Getting Chartered – Process of becoming an Engineer in the UK and Commonwealth of Nations” by Engr. Ace Glen Garcia; and 7. “Stocks, Mutual Funds and REIT’s: Are they Good Passive Investments” by Engr. Napoleon Cepriaso.



“Losing only comes in quitting.”

2022

With countries slowly lifting up it’s COVID restrictions, the 2022 Board of Directors took over with Engr. Niño Jose A. Lopez ,ASEAN Eng. at the helm. As soon as the Strategic Planning for the year had been concluded, the Chapter engaged in a series of activities which includes the following:

- Technical Webinar about “Solid Financial Foundation and Parliamentary Procedure” conducted by Mr. Joey I. Villanueva, CPA on Feb. 11
- “PME Writeshop” conducted by Engr. Crisostomo C. Ortiz, PME, Asean Eng. and Engr. Napoleon M. Cepriaso, PME, FPSME, Asean Eng. on Mar. 4
- Annual Thanksgiving at Obhur Resort on Mar. 17 to 18
- The 2022 SPLE Review Program for Registered Mechanical Engineer (RMEE) and Registered Master Plumber (RMP) aspirants was launched on March 25, preparing members for the resumption of the Special Professional Licensure Examination. Engr. John Ray O. Madla and Engr. Napoleon M. Castañeda served as the lecturers.
- Technical Webinar about “Health and Safety Awareness” was conducted by Engr. Dante L. Calapatia on Apr.22
- “Let’s Play Ball” basketball friendly game at a school stadium in Khames Al Khoulaifa on May 20
- The 2022 Mid-Year Conference and General Membership Meeting (GMM), led by Chairman Engr. Jobert M. De La Rosa, was the Chapter’s first face-to-face formal event since the COVID-19 pandemic. Held at Bora Café Restaurant in Al Ballad, Jeddah, the event featured technical seminars and included the ratification of the 2021 Amended Constitution and By-Laws, overseen by Engr. Noriel J. Nollora.
- “Bowling Fun Game” held in Bowling City, Tahlia on Aug. 26, with Code of Ethics Dir. Engr. Noriel J. Nollora as the champion.
- 2nd General Membership Meeting and Election of 2023 Board of Directors via Hybrid platform at Bora Café Restaurant in Ballad, Jeddah on Sept. 30. It includes a seminar on “Solar PV System Installation – Best Practice conducted by Engr. Ahmed L. Selim
- “Plant Tour at Saudi Airconditioning Manufacturing Co. (SAMCO) Ltd.” on Oct. 28. The presentation and tour was conducted by Engr. Noel A. Cabacungan (QA Supv.), Engr. Othman Ali Abdullah Ali (QA Eng.) and Engr. Aris P. Chong (Prodn. Coordinator)
- 19th Annual Convention and General Membership Meeting at Jiwat Diamond Hotel on Dec.9. It includes seminars conducted by Engr. Niño Jose A. Lopez, Asean Eng. and Engr. John Ray O. Madla, Asean Eng.

Our chapter also initiated fund drives as follows: Tabang Vizmin for victims of typhoon Odette, Arayat Abra for victims of Luzon earthquake, Financial Assistance.

Being a member of the Philippine Professional Organization – Western Region Saudi Arabia (PPO-WRSA), our chapter is actively involved in every activity and event which includes: Leadership and Training Webinar, Gala Night for a Cause, Araw ng Kalayaan with Filipino Community, Community Outreach at SAED Accommodations, Coastal Clean-up Drive at Buhairat Open Beach, Bowling Fun Game with Guardians and Bloodletting drive.

The accomplishments of the Chapter are the following:

- A 10.67% membership growth courtesy of Membership Director Engr. Orlan C. Moriones, Asean Eng, this includes the induction of seven (7) new

members

- Our Chapter Newsletter, “Jeddah Prime Movers” led by our Editor-in-Chief IPP Lee I. Bonifacio published two (2) issues.
- Securing the services of Montreal LLC for the application of CPD Units in our seminars and trainings.

Our National achievers for the year:

- The Outstanding Mechanical Engineers (TOME) Award for Engr. Roseller A. Junsay, Jr. – Special Category – Hospital Utilities Engineering
- The Outstanding Mechanical Engineers (TOME) Award for Engr. John Ray O. Madla – Special Category – Hygienic Engineering (HVAC’s Role in Covid-19 Prevention)

Our ASEAN Engr. Conferees for the year:

- | | |
|--------------------------------|----------------------|
| • Engr. Roseller A. Junsay, Jr | – Bahrain Conferment |
| • Engr. Julius Q. Garcia | – Bahrain Conferment |
| • Engr. Niño Jose A. Lopez | – Bahrain Conferment |
| • Engr. Bliven U. Garcia | – Phil. Conferment |
| • Engr. Lorenzo O. Gaviola | – Phil. Conferment |
| • Engr. Miller F. Narvas | – Phil. Conferment |
| • Engr. Rainier P. Patawi | – Phil. Conferment |
| • Engr. Wilfredo R. Ruiz | – Phil. Conferment |



“Go the extra mile and make it a habit.”

2023 was indeed a year of Achievements for the Chapter.

- The year started with its Kick-Off Meeting on January 7. The Board of Directors met in the Headquarters. President Jose Melvin Santos presented the Annual Plan of Activities for the year 2023. These target activities included sponsored Technical Seminars, Plant Tours, Sport Activities, SPLE Reviews and Examinations, Newsletter Publications, Chapter Conventions, and many others.
- On January 14, the chapter launched its SPLE 2023 Review Sessions for RMEE & RMP. Every Friday morning and Saturday evening, we conducted Hybrid Lecture on Machine Design, Power & Industrial Plant Engineering, Mathematics, Plumbing Code, and Sanitation Design & Installation. The Lecturers & Facilitators were EVP John Ray Madla, Pres. Jomel Santos, TAD Nap Castañeda and PED Julius M. Cañeca
- The 1st Technical Seminar and Product Presentation was sponsored by LG Electronics was held in Jiwat Diamond Hotel, Jeddah on February 24. Mr. Myassar Safwan Baroudi introduced “LG Air Conditioning & Multi-V System” and PP Aldrin Alizon Lango presented the “Basic Parliamentary Procedure”.
- On March 17, Sports Director Mark Harold Ramirez led the “Let’s Play Ball” event in Fawaz Basketball Gym, Al Jaweed District Jeddah Saudi Arabia.
- On March 31, Editor-in-Chief Gilbert Espiritu and the JPM Newsletter Team released the first issue, Volume 18 of the Jeddah Prime Movers Newsletter, the official quarterly Newsletter of the PSME-WRSA Jeddah Chapter. 2 other issues of Volume 18 were released within the year.
- On June 2, Plant Tour Director Ewvin Jaradal led us to our first Plant Tour at the Saudi Laundry Services in King Abdullah Economic City, Rabigh. The Plant location was about 120km from our chapter Headquarters where we met up. Our technical resource speakers from SLS were Engr. Mark Roan and Engr. Sven Eric Van.
- On June 23, we organized a “Thanksgiving and Get Together” at a Private Villa in Usfan to relax and get our well-deserved rest and enjoyment after a fruitful 1st half of chapter activities and to celebrate our successful SPLE Review Sessions, SPLE Examinations,

and Board Results.

- On July 21, Chairman of the 2023 Mid-Year Convention, VPI Orlan Moriones led the Convention and 1st GMM held in Jiwara Diamond Hotel. The MYCGMM was sponsored by REZA Investment. The Mid-Year Convention also had 2 Technical Seminars credited with 3CPD Points. Engr. John John Solam presented the "Design of Air Seal Ring in the Stuffing Box" and Engr. Greg Gulmatico presented the "5S Team Training".
- On August 25, PED Julius M. Cañeca organized a seminar on "How to Become a PME". Past Presidents Napoleon M. Cepiaso and Crisostomo C. Ortiz were the Resource Speakers. The seminar was held in the PSME-WRSA Headquarter.
- On September 8, Chairman of the 2nd GMM Leonard P. Meriales led the 2nd GMM & Election of 2024 BODs at Jiwara Diamond Hotel, Jeddah. The event featured a Technical Seminar on "Boiler & Vessel Design" was presented by PP Crisostomo C. Ortiz and last part was the GMM & Election of 2024 BODs.
- On October 12-14, Pres. Jose Melvin Santos attended the 71st National Convention at the SMX Convention Center in Pasay. The chapter received the following recognitions: Fellow Award – PP Aldrin Alizon D. Lango; TOME Awards - PP Lee I. Bonifacio & IPP Niño Jose A. Lopez; Leadership Awards - VPI Orlan C. Moriones and President Jose Melvin D. Santos; and the Most Outstanding Chapter Award – Category C.
- On December 8, the 20th Annual Convention was led by Chairman EVP John Ray O. Madla in celebration of the fruitful year of the Chapter and to welcome the incoming Executive Officers and Directors of 2024. The Convention theme, "PSME-WRSA JC @ 30: Working Towards Economic Stability while Protecting the Environment" commemorated the chapter's 30th year Founding Anniversary.



"The loudest inspiration you can offer the world isn't your plan it's your proof."

2024

Kick-off and Planning: To commence the year, we held a Board of Trustees meeting last January 4, 2024 at Wego Chinese and Sushi Restaurant. The first half of the meeting was dedicated to the official turnover ceremony, where the 2023 Executive Board handed over the reins to the incoming 2024 Executive Board. In the second half, I presented the Annual Plan of Activities for 2024. This comprehensive plan included a variety of initiatives, such as sponsored technical seminars, plant tours, sports activities, SPLE reviews and exams, newsletter publications, and chapter conventions.

SPLE Review Programs: To kick off the year, we initiated our SPLE 2024 Review Sessions for RMEE and RMP on first week of January. Every Friday morning, we conducted hybrid lectures covering Machine Design, Power and Industrial Plant Engineering, Mathematics, Plumbing Code, and Sanitation Design & Installation. Additionally, we held objective-type review sessions on Saturday nights to reinforce key concepts. To ensure maximum accessibility, we shared video recordings of all lectures and presentations with the reviewees. This year we have three passers from their category:

- Engr. Oliver E. Policarpiio, RMEE
- Engr. Carlo M. Esquivel, RMEE, RMP
- Engr. Mark Joseph A. Madolid, RMEE, RMP

1st Technical Webinar: March 29, 2024, Our chapter conducted our first webinar, Engr. Anthony Bugayong discussed the guidelines on the principles of Engineering, Procurement, and Construction

Management (EPCM) project execution.

Sports and Social Events: The PSME-WRSA JC marked another milestone on May 24, 2024, by organizing an annual bowling mini-tournament at Jeddah Lanes Bowling Center. .

Midyear Convention and General Membership Meeting: On July 26, 2024, VPI Orlan Moriones, the Chairman of the 2024 Mid-Year Convention and General Membership Meeting, presided over the event and, held at the Emerald Hotel. The convention featured two technical seminars, each accredited with 3 CPD points. Engr. Anthony C. Bugayong presented on "Full Turnkey of Oil and Gas Projects" while Engr. Basik Tulawie Sappayan discussed "Data Center Structure & Implementation".

Professional Development: During the Midyear Convention and General Membership Meeting, our Past President Engr. Napoleon M. Cepiaso delivered a presentation on "Primer: How to Become a PME," inspiring members to pursue advanced professional certifications. Coincidentally, during the event, the Professional Regulatory Commission announced the latest batch of PME passers. We are delighted to share that three of our members from the PSME WRSA JC were among the successful examinees.

- Engr. Anthony C. Bugayong
- Engr. Orlan C. Moriones
- Engr. John Ray O. Madla

2nd General Membership Meeting and Elections: On September 8, Chairman Engr. Mark Joseph A. Madolid presided over the 2nd General Membership Meeting and Election of 2025 Officers at Emerald Hotel, Jeddah. COMELEC, led by Chairman Jose Melvin D. Santos, conducted the election, with a total of 15 directors elected.

In September 20, 2024, PSME WRSA JC joined where PPO-WRSA organized a Coastal Clean-Up Drive, at Buhairat Open Beach. Our Chapter also participated in a 1st invitational Bowling Tournament at Bowling City, Sultana Center last November 1, 2024, both events coordinated with the Philippine Consulate General Jeddah.

General Information:

PME Code - Article IV - Section 33 - a

to be in responsible charge of the preparation of plans, designs, investigations, valuation, technical reports, specifications, project studies or estimates or to be in performance of other professional mechanical engineering activities unless he is a duly licensed Professional Mechanical Engineer.



The Philippine Society of Mechanical Engineers Western Region Saudi Arabia (PSME WRSA) 1997 Board of Directors (BOD) was honored with a courtesy call invitation to meet the Vice President of the Philippines Joseph E. Estrada, during their visit to the Philippine Consulate General in Jeddah on December 6, 1996.

Message From The President Of The Philippines



MALACAÑAN PALACE
MANILA

MESSAGE

Since 1995, the **Philippine Society of Mechanical Engineers–Western Region Saudi Arabia Jeddah Chapter (PSME-WRSA JC)** has evolved into a distinguished Filipino professional community abroad, recognized for upholding sound engineering designs, safe operations, and responsible stewardship. Through your discipline and expertise, the systems you maintain stay reliable and safe, thereby reinforcing our reputation for excellence and exemplifying the technical mastery that continues to uplift Philippine industries.

As you hold your **22nd Annual Convention and General Membership Meeting**, I encourage all of you to advance your craft towards a sustainable and technology-driven future where mechanical engineering and smart technologies thrive and contribute to innovation and progress. Let your discussions lead to the greater adoption of effective practices, strengthen ethics and collegiality, and foster open channels for knowledge exchange from Jeddah to our homeland. In this way, we propel concrete and meaningful action that enhances productivity, competitiveness, and resilience both at home and abroad.

I laud the entire PSME-WRSA JC community for elevating the standards of your profession and maintaining cordial, harmonious, and fruitful relations with your peers. I trust that your deliberations will yield outcomes for our collective benefit, and that your commitments will make a lasting impact on worksites, classrooms, and communities. May you continue to excel in your adoptive country and uphold the Philippines' distinction on the global stage as, together, we build a more progressive and prosperous *Bagong Pilipinas*.

May you have an engaging and productive gathering.


FERDINAND R. MARCOS JR.

MANILA
5 December 2025

Message From The Vice President Of The Philippines



Republic of the Philippines
Office of the Vice President

MESSAGE

Assalaamu Alaikum

My warmest greetings and my sincerest congratulations to the officers and members of the Philippine Society of Mechanical Engineers Western Region Saudi Arabia – Jeddah Chapter (PSME-WRSA-JC) as you convene for your 22nd Annual Convention and General Membership Assembly!

Your theme, "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology," is a powerful testament to the forward-thinking mindset of Filipino professionals abroad. It underscores your commitment to keep pace with global advancements and actively lead the charge in sustainable and smart technological solutions.

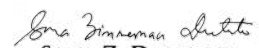
To our Filipino Mechanical Engineers in Jeddah: You are truly among our modern-day nation builders. Every project you manage, every design you approve, and every structure you help bring to life in Saudi Arabia reflects the exceptional skill, dedication, and world-class professionalism of the Filipino workforce. Contribute to the progress of your host nation while sustaining the well-being of your families back home.

May this 22nd Convention serve as a fertile ground for knowledge exchange, stronger fellowship, and renewed commitment to excellence. Always uphold the values of integrity and patriotism, your government and country take immense pride in your accomplishments.

Congratulations, and may you have a highly successful and fruitful convention! Mabuhay ang PSME-WRSA Jeddah Chapter!

Mahalin natin ang Pilipinas—para sa Diyos, sa bayan, at bawat pamilyang Pilipino.

Shukran


SARA Z. DUTERTE
Vice President of the Philippines

Message From The Consul General -PCG JEDDAH

***Inspirational Message of Consul General Rommel A. Romato
for the 22nd Annual Convention and General Membership Meeting
Philippine Society of Mechanical Engineers – Western Region Saudi
Arabia, Jeddah Chapter (PSME-WRSA JC)***

Warm greetings to the officers and members of the Philippine Society of Mechanical Engineers – Western Region Saudi Arabia, Jeddah Chapter, on the occasion of your 22nd Annual Convention and General Membership Meeting.

Since its chartering in 1995, PSME-WRSA JC has stood as a pillar of excellence and professionalism among our Filipino engineers in the Kingdom of Saudi Arabia. Your steadfast commitment to upholding the highest standards of competence, ethical practice, integrity, and civic responsibility reflects the very best of what it means to be a Filipino professional abroad. Equally important is the camaraderie and mutual support you nurture within your ranks—an enduring example of how unity strengthens our global Filipino community.

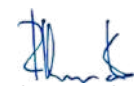
This year's theme, *"Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology,"* is both timely and forward-looking. As the world accelerates toward digital transformation, smart systems, and sustainable solutions, mechanical engineers play a vital role in shaping industries, enhancing efficiency, and building resilient, future-ready infrastructures. Your technical seminars and product presentations not only highlight innovation but also reaffirm the Filipino engineer's relevance and leadership in a rapidly evolving global landscape.

On behalf of the Philippine Consulate General in Jeddah, I commend your dedication to continuous learning, your contributions to the advancement of your profession, and your support for one another as overseas Filipino workers. Your achievements bring pride to our nation and strengthen the bridge of goodwill between the Philippines and the Kingdom of Saudi Arabia.

May this event inspire even greater collaboration, creativity, and commitment to excellence. I wish PSME-WRSA JC continued success and encourage you to keep forging pathways that elevate both your profession and the Filipino community you represent with honor.

My heartfelt congratulations and best wishes for a productive and inspiring convention and general membership meeting.

Sincerely,



ROMMEL A. ROMATO
Consul General
Philippine Consulate General in Jeddah

Message From PSME 2025 National President



My warmest greetings to our fellow Filipino Mechanical Engineers at the 22nd Annual Convention and General Membership Meeting of the PSME Western Region Saudi Arabia Jeddah Chapter (PSME-WRSA JC)! Your theme, “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology,” speaks volumes of the forward-thinking mindset that defines every Filipino mechanical engineer. In a world where technology evolves faster than our morning coffee brews, innovation is no longer a luxury—it is our professional oxygen. After all, it is not just about new tools or systems; it’s about new ways of thinking, of solving problems, and of finding balance between progress and purpose. And sustainability? It is the moral compass that keeps us from trading progress for the planet’s well-being.

Every valve you tighten, every system you improve, every idea you share contributes to a world that works better—not just for industries, but for people. That’s the beauty of being a Filipino Mechanical Engineer: we don’t just design solutions; we design hope. As we move further into this smart age, may we continue to pair technology with humanity, and intelligence with integrity. Because true innovation doesn’t just make things work—it makes life better.

To the officers and members of PSME-WRSA Jeddah Chapter, congratulations on another year of excellence, leadership, and unity. Keep learning, keep leading, and keep building not just machines, but a sustainable and meaningful legacy for the next generation of engineers.

Mabuhay, and may your passion continue to power the future of Mechanical Engineering!

ARCHELLE BEA-BACULI, PME, AER, FSPME
2025 PSME National President

Message From PSME 2026 National President-Elect



I would like to extend my warm greetings to the members of PSME, especially to our members in the Western Region Saudi Arabia (WRSA) Jeddah Chapter.

It is my honor and privilege to be part of the 22nd Annual Convention and General Membership Meeting (GMM) of your chapter. This annual convention is not just a social gathering and a respite from the daily routine of work, but importantly, a means to maintain connectivity with our fellow mechanical engineers in the effort to improve ourselves and our profession. It is said that there is always time for everything. Thus, there is a time to rest from our daily work routine and a time to enjoy the company of friends and colleagues. Let us make the most of this gathering to rekindle friendships and to make stronger bonds as members of PSME.

The theme, “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology” is timely in advocating the need for innovation as we navigate from the 4th to the 5th industrial revolution as a SMART PSME. Status quo is no longer an option. Growth is imperative in our profession. We need to be innovative and learn new and smart technologies to survive on this very competitive environment. Take this opportunity to exchange ideas and learn from each other as most of you, if not all, are working in an oil and gas industry, construction, manufacturing or in a utilities-supporting the industry. Take advantage of wherever you are situated, and be an innovator, because as Filipino engineers, we’re noted to be industrious, resourceful, resilient, and adaptable. Sabi nga, “Tatak Pinoy”.

May this convention and GMM inspire in us to a deeper commitment for the good of our membership so that we can sustain our beloved PSME to be powerful, influential and resilient organization.

Again, congratulations and Mabuhay!

Engr. Rodolfo Seredrica
PSME-National
2026 President Elect

Message From PSME VP For Middle East



It is with immense pleasure and profound pride that I extend my warmest greetings and heartfelt congratulations to the esteemed officers and dedicated members of the Philippine Society of Mechanical Engineers – Western Region Saudi Arabia (PSME-WRSA JEDDAH Chapter) on the occasion of your 22nd Annual Convention and General Membership Meeting!

The remarkable dedication and solidarity you exhibit, even while working miles away from our home country, serve as a powerful testament to the unwavering spirit of the Filipino Mechanical Engineer.

The theme you have wisely chosen for this year, “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology,” is exceptionally fitting and speaks directly to the core challenges and opportunities facing our profession today. In an era where climate change demands urgent action and digital transformation reshapes every industry, Mechanical Engineers are not just participants—we are the prime movers of change.

Our discipline, the bedrock of industrial civilization, now sits at the exciting intersection of traditional mechanical principles and cutting-edge smart technologies. From developing highly efficient HVAC systems and optimizing industrial processes with AI, to pioneering renewable energy solutions and designing smart manufacturing systems, it is our ingenuity that will drive us toward a truly sustainable future. The integration of IoT, machine learning, and automation is no longer a luxury but a professional imperative.

I encourage every member to view this convention not just as an annual gathering, but as a crucial platform for professional recalibration and intellectual exchange. Engage actively in the technical sessions, share your valuable experiences from the field, and use this opportunity to broaden your professional network. Let us challenge ourselves to adopt new skills, embrace disruptive technologies, and commit to continuous learning to maintain our competitive edge globally.

Our presence and contribution in the Kingdom of Saudi Arabia, a nation undergoing massive infrastructural and economic transformation through Saudi Vision 2030, reflect the high caliber and trusted expertise of Filipino professionals. We must continue to uphold the highest standards of professional and ethical practice, ensuring that every project we undertake contributes positively to both the host country and the reputation of the Philippines.

Being part of PSME means more than holding a membership card; it means subscribing to a shared commitment to excellence, integrity, and camaraderie. Let the camaraderie fostered within this chapter be your anchor and source of strength as you navigate the complexities of your profession abroad.

May this 22nd Annual Convention be filled with fruitful discussions, renewed inspiration, and a solid commitment to advancing Mechanical Engineering for a more sustainable and smarter tomorrow.

Congratulations and God bless us all!

Engr. Pasciano A. Defensor, PME, AE
National Vice President for Middle East

Message From The 2025 President Of PPO-WRSA



My warmest greetings to the distinguished men and women of the Philippine Society of Mechanical Engineers – Western Region Saudi Arabia Jeddah Chapter (PSME-WRSA JC).

It is with profound honor and gratitude to take part in the celebration of your 22nd Annual Convention and General Membership Meeting. This gathering is not only a testament to your professional achievements, but also a reaffirmation of your unwavering commitment to innovation, sustainability, and excellence in mechanical engineering.

Your chosen theme, “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology,” resonates deeply with the mission of your profession. As engineers, you carry the responsibility of shaping systems, industries, and communities. In this era of smart technology, your role extends far beyond efficiency and productivity—you are called to be stewards of sustainability, guardians of progress, and pioneers of solutions that uplift both humanity and our planet.

To the officers and members of PSME-WRSA JC, remember that true innovation is not merely about creating something new—it is about creating something purposeful and enduring. It is about designing with vision, building with responsibility, and advancing with integrity. Each of you holds the power to transform challenges into opportunities, and opportunities into lasting legacies.

As the current PPO-WRSA President, I extend my heartfelt gratitude for the invaluable contributions of PSME-WRSA JC to our umbrella organization. I am deeply inspired by the passion and dedication you continue to demonstrate. Together, let us embrace smart technology not as a substitute for human ingenuity, but as a force that amplifies it. Let us engineer a future where sustainability is not an option, but a standard.

May this convention spark fresh ideas, strengthen your unity, and empower you to lead mechanical engineering into a new era—an era where innovation and sustainability walk hand in hand.

The future is not something we wait for—it is something we build. And today, we build it together.

Congratulations at Mabuhay ang PSME-WRSA JC!

God Bless.
Arch. Jan Marlou A. Luis
President
PPO-WRSA 2025

Message From The PSME WRSA-JC 2025 Chapter President



It is with great pride and heartfelt appreciation that I extend my warmest congratulations to all members, Fellow Board of trustees, partners as we celebrate our 22nd Annual Convention and General Membership Meeting.

This year's theme, "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology," reflects the bold direction we are taking as a profession—embracing innovation, sustainability, and digital transformation. As Filipino mechanical engineers working abroad, we are uniquely positioned to lead and contribute to this global shift with excellence and integrity. I would like to express my sincere gratitude to:

- Almighty God, for His guidance, strength and grace throughout my journey.
- My Family, for their unwavering love, patience, and support—they are my anchor and inspiration.
- Our generous sponsors, whose unwavering support fuels our programs and makes this event possible.
- Our past presidents, for laying the groundwork and inspiring the next generation of leaders.
- My fellow Board of Trustees, for your dedication, teamwork, and commitment to our shared mission.

As I pass the torch, I proudly congratulate the incoming Board of Trustees, led by our new Chapter President-Elect, Engr. Jobert M. De La Rosa. May your leadership be guided by vision, collaboration, and a passion for service. I am confident that the chapter will continue to grow and thrive under your stewardship.

To all our members, thank you for your continued trust and participation. Let us keep moving forward, united in purpose, and inspired by the limitless possibilities of engineering in the smart, sustainable future we are helping to build.

Mabuhay ang PSME! Mabuhay tayong lahat!

Orlan C. Moriones, PME, AE, RMP, SO2
2025 Chapter President

Message From The 22nd Annual Convention Chairman



A Heartfelt Congratulations and a Warm Welcome!

On behalf of the entire Organizing Committee, it is with immense pride and great pleasure that I extend my warmest congratulations to each and every one of you as we gather for the 22nd Annual Convention of the PSME WRSA JC.

This year, we converge under the powerful and timely theme: “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology.” This is not just a theme; it is our collective call to action. It challenges us, as the next generation of mechanical engineers, to be at the forefront of a revolution—where our deep-rooted engineering principles merge seamlessly with the boundless potential of technologies such as AI, IoT, and robotics.

Our goal for this convention is to ignite conversations that matter. We have curated a program designed to explore how we can design smarter systems, optimize energy use, develop greener materials, and create circular economies—all through the innovative lens of modern technology.

To our distinguished speakers, esteemed guests, dedicated partners, and my fellow PSME members, thank you for your commitment to this cause. Your presence here today energizes our mission.

Let us use this convention as a springboard for collaboration, learning, and innovation. May the ideas shared here become the sustainable solutions of tomorrow.

Once again, congratulations to us all for reaching this milestone. Let’s make the 22nd Annual Convention a resounding success!

Sincerely,

Jobert M. De La Rosa, PME, SO2
Convention Chairman
22nd Annual Convention - PSME WRSA JC



Message From The Past Presidents

Advancing in mechanical engineering is not an option but a necessity if one wants to cope up or stay relevant in the age of technology and industry. Smart technologies such as system integration, sustainability and energy system, sensors IOTs (internet of things) had been around especially in this part of the globe. What is really thriving is the proliferation of AI (artificial intelligence) usage even to the level of ordinary person. Thus, engineers must assess and know its capabilities and limitations.

Focus on Saudi Vision 2030 and industries that works or supports it. Engineer's skill sets must be align and remain compatible by capitalizing in global certification (PMP, CEM, etc.), software training (BIM, CFD/FEA & scheduling), technical vendors training, green buildings (LEED, Estidama), data skills (Microsoft Excel Power BI, Python, etc.), etc. To keep abreast with Philippines' technical practice(s), attend Philippines' online master program(s) dealing with renewable energy, engineering management, applicable mechatronics, and relevant curriculums.

Each engineer must consider each own timeline, location, and plan as it is unique to each individual needs. In the end it is not what we think but what action we had taken now to improve competency and widen each professional chances and career prospect(s).

Danilo V. Gercio, PME
PSME WRSA-JC President 1998

Code of Mechanical Engineering Ethics in the Philippines: GENERAL PRINCIPLES

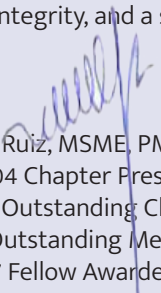
Rule 1. The mechanical engineer shall, in the practice of his profession, be governed by the Golden Rule, the ideals of service to man and his environment, and the indispensability of unwavering public confidence in his professional competence, integrity and humanity.

The theme "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology" embodies the vision and obligation of today's mechanical engineers to guide transformative trade in an increasing number of virtual and sustainability-pushed international.

As we stand on the crossroads of innovation and environmental stewardship, this convention serves as a platform to alternate know-how, showcase improvements, and encourage collaboration among experts, researchers, and future engineers. Through the combination of clever technology—which include automation, artificial intelligence, the Internet of Things, and renewable strength systems—mechanical engineers are redefining industry standards closer to extra efficient, adaptive, and sustainable practices.

The Philippine Society of Mechanical Engineers keeps to uphold its commitment to excellence, innovation, and country-constructing. May this collecting ignite new ideas, improve partnerships, and empower every member to participate in shaping a better, extra sustainable future for our use and the world.

Together, let us maintain to strengthen the sphere of mechanical engineering with ingenuity, integrity, and a shared imaginative and prescient for sustainability.


Wilfredo R. Ruiz, MSME PME, FPSME, AE
2000 & 2004 Chapter President, PSME-WRSA Jeddah Chapter
2000 Most Outstanding Chapter President
2004 The Outstanding Mechanical Engineer (TOME)
2012 & 2017 Fellow Awardee



General Information:

PME Code - Article IV - Section 33 - c

to be in responsible charge of the construction, erection, installation, alteration, or of the performance of a mechanical engineering service in connection with the manufacture, sale, supply or distribution of any mechanical works, project or plant either for himself or for others, unless he is a duly registered Professional Mechanical Engineer or Mechanical Engineer



My heartfelt congratulations to the Officers and members of Philippine Society of Mechanical Engineers – Western Region, Saudi Arabia Jeddah Chapter in hosting their 22nd Annual Convention and General Membership Meeting.

This year's theme "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology" – is just been timely as the world is facing unprecedented challenges – from climate change and resource scarcity to the rapid pace of technological transformation. These challenges call not only for awareness but for action – for innovation that is both intelligent and responsible.

Mechanical Engineering, long regarded as the foundation of industrial progress, now stands at the crossroads of sustainability and digital transformation. With the rise of smart technologies – from artificial intelligence and the Internet of Things to automation and renewable energy systems – our field is being redefined. It is no longer just about designing machines; it is about designing solutions that work with the planet, not against it.

Panel discussions and presentations will shed light on how we, as engineers, innovators, and learners, can harness these advancements to build a sustainable and intelligent future. Let this be a space for exchanging ideas, challenging conventions, and inspiring one another to think boldly and act responsibly.

Let us begin our journey toward innovation that truly makes a difference.

Dionisio A. Lora, Jr., PME

Past President 2001

TOME Awardee 2007

Code of Mechanical Engineering Ethics in the Philippines:

GENERAL PRINCIPLES

Rule 2. The mechanical engineer shall maintain the proper pride for his profession, observe the standards of professional practice, safeguard the dignity, welfare, and reputation of his colleagues in the professions, and fulfill his duties and obligations as a citizen of the Republic of the Philippines.



"As we gather under the theme 'Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology,' let's ignite a pioneering spirit. Smart systems—AI-driven automation, IoT-enabled networks, and adaptive robotics—are reshaping our field, offering unprecedented tools to tackle climate action, resource efficiency, and circular economies.

This is our moment to fuse mechanical precision with digital intelligence, creating solutions that reduce waste, optimize energy, and empower green industries.

From renewable energy systems to smart urban infrastructure, every innovation must balance technological ambition with environmental responsibility. Let's collaborate across disciplines, champion ethical design, and engineer a legacy where progress thrives in harmony with Earth's ecosystems.

The future demands bold vision—let's lead it together."

Orlando L. Digma, PME

2003 PSME-WRSA Jeddah Chapter President

Code of Mechanical Engineering Ethics in the Philippines:

GENERAL PRINCIPLES

Rule 3. The mechanical engineer shall update and enhance constantly his professional knowledge and skills through assiduous research and study, and meaningful participation in continuing education programs and seminars conducted or authorized by the Philippine Society of Mechanical Engineers or educational institutions supervised by the State.

Dear Fellow Mechanical Engineers,

It is with great pride and enthusiasm that we gather for the 22nd Annual Convention — a celebration of ingenuity, resilience, and progress in our ever-evolving field. This year's theme, "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology," challenges us to push the boundaries of what is possible through creativity, collaboration, and compassion for our planet.

As mechanical engineers, we stand at the intersection of innovation and responsibility. The rise of smart technologies—artificial intelligence, automation, the Internet of Things, and sustainable materials—offers unprecedented opportunities to redefine industries and improve lives. Yet, these advancements also call upon us to ensure that our innovations contribute to a greener, more equitable world.

Let this convention serve as a platform for sharing ideas, inspiring breakthroughs, and building networks that will drive meaningful change. Together, let us continue to harness our expertise not only to design machines and systems, but also to engineer a future that is sustainable, intelligent, and humane.

May this gathering ignite our collective passion for innovation and remind us that the true measure of progress lies not just in technological advancement, but in our commitment to using it wisely—for people, for society, and for the planet we call home. Congratulations to all participants, organizers, and partners of this momentous event.

May the 22nd Annual Convention of PSME-WRSA, Jeddah Chapter marks another milestone in our shared journey toward a sustainable and smart future.

Joselito L. Bentulan, PME
PSME-WRSA Jeddah Chapter
2010 - President



It is with great pride and honor that I extend my warmest greetings to the Board of Trustees and to all dynamic Members PSME-WRSA Jeddah Chapter on its 22nd Annual Convention & General Membership Meeting.

The Annual Convention Theme, "Innovating a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology," reflects the critical role we play as Mechanical Engineers in shaping a world that is not only technologically advanced but also environmentally responsible.

Mechanical engineering has always been the spine of industrial progress. The integration of smart technologies such as Automation, AI and IoT versus our traditional engineering practices is transforming the way we design, manufacture and maintain systems. This evolution demands that we, as Mechanical Engineers will continuously learn, adapt and lead where PSME-WRSA Jeddah Chapter will play a vital role as well.

Sustainability is already a necessity not an option. Our designs must minimize environmental influence, augment energy use, and ensure long-term flexibility that will create solutions and meet the needs of today without bargaining the future.

I encourage every member to actively participate in the sessions, share knowledge, and collaborate with peers. Let this convention be a platform for inspiration and action—where ideas become a pathway of solutions and visions become reality. Together, let us uphold the values of excellence, integrity, and service we have learned with our beloved Chapter as we advance mechanical engineering for a sustainable and smarter future.

Mabuhay ang PSME-WRSA Jeddah Chapter!

RAINIER PLAMENCO PATAWI - PME, ASEAN Eng.
Year 2011 PSME-WRSA Jeddah Chapter President
PSME - TOME Information Technology Year 2011
PSME - Most Outstanding Member Year 2007





As we gather for the 22nd Annual Convention and General Membership Meeting, we are reminded of our collective mission to uphold excellence, integrity, and innovation in our profession.

This year's theme, "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology", underscores our responsibility to lead the nation toward greener and more intelligent industrial progress. In this era of rapid transformation, let us continue to harness emerging technologies and sustainable engineering practices for the benefit of our communities and future generations.

Allow me to express my profound gratitude to outgoing President Engr. Orlan C. Moriones, PME, AE, RMP for his unwavering dedication, dynamic leadership, and valuable contributions in guiding our chapter through another successful year. His efforts reflect the same spirit of service we have all pledged to uphold. Further, I extend my warmest congratulations to Engr. Jobert M. de la Rosa, PME as he assumes the presidency for 2026. I am confident that under his capable leadership, our Chapter will continue to thrive and keep the legacy of noble service to the members and community.

Together, let us remain steadfast in our vision and united in our purpose — a sustainable future for our nation and the world. Mabuhay ang PSME-WRSA Jeddah Chapter!

Napoleon M. Cepriaso, PME, AE
 2016 Fellow Awardee
 2012 PSME-WRSA Jeddah Chapter President
 2012 PSME Most Outstanding Chapter President Award
 2011 & 2002 TOME Awardee

Code of Mechanical Engineering Ethics in the Philippines:
GENERAL PRINCIPLES

Rule 4. The ethical principle governing the mechanical engineer applies equally to partnerships, firms and entities organized and existing for the practice of mechanical engineering.



Congratulations to my PSME-WRSA Jeddah Chapter family on its 22nd Annual Convention and General Membership Meeting, headed by our very energetic President, Engr. Orlan Moriones, PME!

As we gear up for our 22nd Annual Convention—one of our most cherished traditions and activities—it is my honor and privilege to extend my heartfelt greetings and message to each and every member of our renowned organization. As a past president, I take great pride in acknowledging the dedication, perseverance, and outstanding service of our Board of Trustees and Officers. Your commitment to our members is truly commendable and deeply appreciated.

The theme, "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology," is both timely and inspiring, especially amid today's global economic and environmental challenges.

This year's much-anticipated event promises to reach greater heights, featuring an impressive line-up of relevant topics and distinguished speakers from various fields of specialization. As the call for advanced competencies and professional credentials becomes increasingly vital, it is now more important than ever for us to elevate our expertise and uphold the Gold Standard in our profession.

Let this gathering serve as an opportunity for every member to explore state-of-the-art technologies, broaden knowledge, and strengthen linkages among colleagues in the field of mechanical engineering.

Wishing everyone a truly excellent and meaningful convention!

Crisostomo C. Ortiz, PME, AE
 Past President (2014)
 TOME Community Service Awardee (2011)
 ASEAN Registered Engineer (2020)

CONGRATULATIONS PSME-WRSA Jeddah Chapter on its 22nd ANNUAL CONVENTION and General Membership Meeting! Another year of successful accomplishments added to the roll of achievements of the chapter.

Credit to the 2025 Board of Trustees under the leadership of Engr. Orlan Moriones, Chapter President, for a job well done.

The theme, “Innovating for a Sustainable Future Advancing Mechanical Engineering in the Age of Smart Technology” is a more challenging goal but attainable as smart technologies had already been applied in many areas. If integrated in a mechanical equipment, Smart Technology helps facilitate operation control, performance monitoring, etc., remotely, are just few advantages/benefits of getting smart.

As Filipino Mechanical Engineers, let us continuously enhance our technical expertise thru seminars, conventions, practical training, etc., thus it helps us become equipped with the new technology trends in the practice of mechanical engineering and help us achieved our goal.

MABUHAY ANG PSME-WRSA Jeddah Chapter!!!

RUBEN B. SERRANO, PME

2015 Chapter President (PSME-WRSA Jeddah Chapter)

2016 Charter President (Jeddah Western Region Chapter)

2016 - 2017 Deputy VP-Middle East (Western Region, Saudi Arabia)

2017 TOME Tool Engineering Awardee

Code of Mechanical Engineering Ethics in the Philippines:

RELATIONS WITH THE STATE

Rule 5. The mechanical engineer shall honor and respect the supreme authority of the State, the Rule of Law, the primacy of the general welfare, the fundamental rights of persons, and the obligations and privileges of citizens recognized and guaranteed by the Constitution of the Philippines.



My warmest greetings to the PSME-WRSA JC's 22nd Annual Convention and General Membership Meeting. Congratulations to all of you for the hard work, dedication and contribution to making this event MOMENTOUS!

The theme “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology” is timely relative to our country's situation today where lot of natural disasters occurred that shaken our fellow countrymen. Every development that has been created today will be a seed for tomorrow's flourishing world. Innovation is not just about contemporary ideas — it's about determining solutions that complement our planet, elevate our communities to the next level, and ensure that progress never comes at the cost of our future generation. Let's all design a world where sustainability is not an option but rather be the foundation of every innovation we challenge to dream.

In this era of AI, where machines can think, learn, and adapt, mechanical engineering stays at the heart of revolution. We are no longer just building parts and systems — we are creating an intelligent solution that connect the physical and digital worlds. Every piece of equipment we design, every system we construct, every mechanism we upgrade, becomes sharper, more effective, and more connected.

Together, let us hold the innovation confidently, meld the unchanging engineering principles with unconventional technology, and shape our future where concepts don't just turn into creation — they think, evolve, and inspire.



Jemuel B. Esguerra, PME

2018 PSME-WRSA Jeddah Chapter President

2012 Most Outstanding Chairman



Warmest regards and commendation to the PSME-WRSA Jeddah Chapter on the celebration of its 22nd Annual Convention and General Membership Meeting.

My deep appreciation to the 2025 Board of Trustees, led by Engr. Orlan C. Moriones, for their remarkable leadership and unwavering commitment to the Chapter and the Society. We also look forward to a bright and promising journey ahead with the incoming Board of Trustees for Fiscal Year 2026, under the leadership of Incoming President Engr. Jobert M. De La Rosa.

The Chapter's theme for fiscal year 2026 "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology" embodies an appropriate and forward-looking vision.

Innovation today goes beyond progress—it is a responsibility. As mechanical engineers, we are called to create solutions that advance society while protecting our planet. With the power of smart technologies such as IoT, artificial intelligence, and advanced materials, we can build systems that are efficient, intelligent, and sustainable.

Let us work together to shape a future where technology and nature thrive in harmony—ensuring that our innovations serve both humanity and the environment.

Engr. Aldrin Alizon D. Lango FPSME, RMEE, AE,
Chapter President 2019 & 2020
2018 TOME Awardee

Code of Mechanical Engineering Ethics in the Philippines:
RELATIONS WITH THE STATE

Rule 6. He shall cooperate fully with the State in the pursuit of national development plans and programs, the inviolability of national security, the promotion of peace, and the prevention and/or prosecution of unjust, criminal or unlawful acts and omissions.

Greetings of peace!

Congratulations to the PSME-WRSA Jeddah Chapter on its 22nd annual convention! Our convention theme, "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology," invites us to integrate artificial intelligence (AI) and machine learning into mechanical engineering processes that offer unprecedented opportunities for innovation. As the world struggles with the pressing challenges of resource depletion, innovation must continue to develop sustainable technologies that not only enhance efficiency but also reduce environmental impact.

We, in the PSME-WRSA Jeddah Chapter, should utilize AI for the betterment of our society. Guided by our vision and mission, let us strive hard together and harness each member's unique skills and perspectives. Successful teamwork is essential for driving innovation and achieving our shared objectives.

Congratulations to the 2025 Board of Trustees headed by Engr. Orlan C. Moriones, PME. Thank you for your unselfish dedication and contributions to the Society. For the 2026 Board of Trustees to be headed by Engr. Jobert dela Rosa, PME, may the force be with you.

Mabuhay ang PSME-WRSA Jeddah Chapter!
God bless us all.

Lee I. Bonifacio, PME, AE, MACDDS
2021 PSME-WRSA Jeddah Chapter President
2016 PSME-WRSA Toastmasters Club President

Code of Mechanical Engineering Ethics in the Philippines:
RELATIONS WITH THE STATE

Rule 7. He shall be ready to render the services needed for the adequate and orderly development of the resources of the country, and to offer his mechanical devices and inventions essential or necessary for national defense



Congratulations to the PSME-WRSA Jeddah Chapter on its 22nd Annual Convention and General Membership Meeting with a theme “Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology”. Kudos to the 2025 Board of Trustees led by Chapter President Engr. Orlan C. Moriones and the Supreme Members, your commitment has made this event a resounding success.

Smart Technology, which includes A.I. (Artificial Intelligence) and IoT (Internet of Things), has a profound effect on our daily tasks, such as communication and decision-making processes, which become fast-paced. The integration of mechanical engineering with smart technology enables the development of applications for energy efficiency and building management systems that require faster processing of data to satisfy complex parameters. This is the challenge for us, mechanical engineers, to harness the power of technology, not to make us complacent, but to make us efficient with the betterment of our environment.

Congratulations also to the 2026 Board of Trustees, with Incoming Chapter President, Engr. Jobert M. De La Rosa, continue to carry on the same passion of service and dedication to our fellow mechanical engineers.

To our Supreme Members, continue supporting our Chapter, be engaged, share your thoughts and inputs for our continuous improvement.

We, the Council of Past Presidents are always ready to support you in whatever way we can.

Mabuhay ang PSME!!!
Mabuhay ang PSME -WRSA Jeddah Chapter!!!

Niño Jose A. Lopez, PME, Asean Engr.
Year 2022 PSME-WRSA Jeddah Chapter President
Year 2023 PSME-TOME Awardee



Congratulations to PSME-WRSA Jeddah Chapter on its 22nd Annual Convention. With the theme, “Innovating for a Sustainable Future and Advancing Mechanical Engineering in the Age of Smart Technology” to prepare us to the challenges of climate change and environmental degradation. As Mechanical Engineers, we play a vital role in creating and introducing technologies that contribute to sustainability and energy efficient systems. Harnessing green resources while reducing waste and in line with the current trend of digital intelligence.

To the 2025 Board of Trustees led by President Orlan Moriones, I express my gratitude for all the hard work and dedication leading to a prosperous year. I urge you to keep up the great work we have achieved this year and carry that momentum into the year ahead.

To the 2026 Board of Trustees to be led by Pres-Elect Jobert De La Rosa, I wish you all the best. Keep the Legacy of the PSME-WRSA Jeddah enduring. Always keep in mind that your act of volunteerism will foster solidarity, resilient, and create transformation to our members.

And to our Supreme Members, I encourage you all to find time to participate in and benefit from the chapter programs that will advance and develop our career competencies towards the SMART world.

Jose Melvin D. Santos, PME, AE
2023 Chapter President PSME WRSA Jeddah Chapter

Code of Mechanical Engineering Ethics in the Philippines:
RELATIONS WITH THE STATE

Rule 8. In a national emergency, he shall offer his professional knowledge, skill and experience in the service of the State.





First, a massive congratulations to the 2025 PSME-WRSA Jeddah Chapter Officers and Directors led by President Orlan C. Moriones, you've successfully completed your term, and that's a significant achievement. Mabuhay!

And let's give a huge shout-out to the 22nd Annual Convention Chairman EVP Jobert M. De La Rosa and the entire committee! You all did a fantastic job and put in an incredible amount of work to prepare for the PSME-WRSA, Jeddah Chapter's 22nd Annual Convention with the theme: "Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology". Let's continue to strengthen our skills, share our knowledge, and innovate responsibly.

To the incoming 2026 Board of Trustees, led by President-Elect Jobert De La Rosa, I extend my sincerest well wishes. Continue to uphold and advance the lasting legacy of the PSME-WRSA Jeddah Chapter.

Mabuhay ang PSME WRSA Jeddah Chapter!

John Ray O. Madla, PME, ASEAN Engr, ACPE
2022 TOME Awardee
2024 Chapter President PSME WRSA Jeddah Chapter

General Information:

PME Code - Article IV - Section 33 - b

to teach professional subjects in mechanical engineering course unless he is a duly licensed Professional Mechanical Engineer, or a Masters- degree or Doctorate degree holder in mechanical engineering.



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Technical Write-Ups

The Cutting Edge of Mechanical Engineering: Latest Technological Advancements



by:
Engr. John Ray O. Madla
PME, ACPE, AE, RMP

Mechanical engineering, a cornerstone of industrial progress, continues to evolve at a rapid pace. From microscopic marvels to grand-scale innovations, cutting-edge technologies are transforming the field. Let's delve into some of the most significant advancements:



Artificial Intelligence (AI) and Machine Learning is being used to optimize designs, predict maintenance needs, and improve manufacturing processes. Machine learning algorithms can analyze vast amounts of data to identify patterns and make predictions, which can be used to improve the efficiency and reliability of mechanical systems.

1. Predictive Maintenance

AI algorithms can analyze data from sensors on machinery to predict potential equipment failures before they occur. This proactive approach allows manufacturers to schedule maintenance during non-peak hours, minimizing downtime and reducing costs.

2. Quality Control

AI-powered vision systems can inspect products for defects with greater accuracy and speed than human inspectors. This leads to improved product quality, reduced waste, and increased customer satisfaction.

3. Process Optimization

AI can analyze vast amounts of data from manufacturing processes to identify inefficiencies and bottlenecks. This information can be used to optimize production schedules, improve resource allocation, and reduce energy consumption.

4. Supply Chain Management

AI can help optimize supply chains by predicting demand, identifying potential disruptions, and improving inventory management. This leads to reduced costs, improved delivery times, and increased customer satisfaction.

5. Product Development

AI-powered tools can be used to design and develop new products more efficiently. For example, generative design algorithms can explore a wide range of design options to find the optimal solution for a given set of constraints.

6. Automation

AI-powered robots and cobots (collaborative robots) can automate repetitive tasks, freeing up human workers to focus on more complex and strategic activities. This leads to increased productivity and improved workplace safety.

7. Cybersecurity

AI can be used to detect and respond to cyber threats that could disrupt manufacturing operations. This is increasingly important as more and more manufacturing systems are connected to the internet.

Examples of AI in Action

Predictive Maintenance: General Electric uses AI to predict when its jet engines need maintenance, reducing downtime and improving safety.

Quality Control: Tesla uses AI-powered vision systems to inspect its cars for defects, ensuring that only the highest quality vehicles are delivered to customers.

Process Optimization: Coca-Cola uses AI to optimize its production processes, reducing energy consumption and improving efficiency.

Product Development: Nike uses AI-powered design tools to create new shoe designs that are both innovative and functional.

AI is still a relatively new technology in manufacturing, but its potential is vast. As AI continues to evolve, we can expect to see even more innovative applications in the years to come.

Additive Manufacturing (3D Printing)

is revolutionizing the way products are designed and manufactured. It allows for the creation of complex geometries that would be impossible to produce using traditional methods. 3D printing is also being used to create customized products and to reduce waste.

How Does 3D Printing Work?

The process typically involves a digital 3D model of the object to be created. This model is then sliced into thousands of thin, cross-sectional layers. A 3D printer, equipped with a nozzle or laser, then deposits material onto a build platform, layer by layer, following the digital instructions.

Types of 3D Printing Technologies:

Fused Deposition Modeling (FDM): This is the most common type, where a plastic filament is melted and extruded through a nozzle to create the object.

Stereo-lithography (SLA): A laser solidifies a liquid resin layer by layer, creating a solid object.

Selective Laser Sintering (SLS): A laser sinter (melts and fuses) powdered materials like plastic or metal to create the object.

Direct Metal Laser Sintering (DMLS): A high-powered laser melts metal powder to create complex metal parts.

Benefits of 3D Printing:

Design Freedom: 3D printing enables the creation of complex geometries that would be impossible or very difficult to produce using traditional methods.

Customization: It allows for mass customization, enabling the creation of unique and personalized products.

Reduced Lead Times: Prototyping and production cycles can be significantly

reduced, accelerating the development process.

Reduced Material Waste: 3D printing minimizes material waste compared to traditional subtractive manufacturing.

On-Demand Manufacturing: Products can be manufactured on-demand, reducing the need for large inventories.

Applications of 3D Printing:

Prototyping: Rapid prototyping of new designs and concepts.

Manufacturing: Production of end-use parts, tools, and fixtures.

Healthcare: Creation of personalized medical devices, prosthetics, and implants.

Aerospace: Manufacturing of lightweight and complex components for aircraft and spacecraft.

Automotive: Production of customized car parts and tooling.

Architecture: Construction of intricate and customized architectural models and components.

The Future of 3D Printing:

3D printing technology is constantly evolving, with new materials, processes, and applications being developed.

As the technology continues to advance, we can expect to see even more revolutionary applications in various industries, transforming the way we design and manufacture products.



Internet of Things (IoT) is connecting physical objects to the internet, allowing them to collect and share data. This data can be used to monitor the performance of mechanical systems, predict maintenance needs, and improve operations.

Key Applications of IoT in Mechanical Engineering:

1. Predictive Maintenance:

IoT sensors embedded in machinery can monitor critical parameters like temperature, vibration, and pressure in

real-time.

By analyzing this data, engineers can anticipate potential equipment failures before they occur, minimizing costly downtime and optimizing maintenance schedules.

2. Remote Monitoring and Control:

IoT enables remote monitoring and control of mechanical systems, regardless of location. This allows engineers to track performance, diagnose issues, and even make adjustments remotely, improving operational efficiency and reducing the need for on-site visits.

3. Smart Manufacturing:

IoT-powered smart factories leverage interconnected devices and systems to optimize production processes.

Real-time data analysis can identify bottlenecks, improve resource allocation, and enhance overall productivity.

4. Product Development and Design:

IoT data collected from prototypes and field deployments can provide valuable insights into product performance and user behavior.

This data-driven approach allows engineers to refine designs, improve

functionality, and create more innovative and user-centric products.

5. Energy Efficiency:

IoT can play a crucial role in optimizing energy consumption in mechanical systems. By monitoring energy usage patterns and identifying inefficiencies, engineers can implement strategies to reduce energy waste and minimize environmental impact.

Benefits of IoT in Mechanical Engineering:

- Enhanced Efficiency:** Reduced downtime, optimized resource allocation, and improved productivity.
- Increased Reliability:** Proactive maintenance and early detection of potential failures.
- Improved Decision-Making:** Data-driven insights for informed engineering decisions.
- Enhanced Safety:** Real-time monitoring of critical parameters to identify and mitigate potential hazards.
- New Business Models:** IoT-enabled services and products can create new revenue streams.

Challenges and Considerations:

- Data Security:** Ensuring the security and privacy of sensitive data collected from IoT devices is paramount.
- Interoperability:** Ensuring seamless communication and data exchange between different IoT devices and systems.
- Scalability:** Developing scalable IoT solutions that can handle the increasing volume of data generated by connected devices.
- Integration:** Seamlessly integrating IoT technologies into existing mechanical engineering workflows and systems.

Conclusion

Artificial Intelligence (AI) is revolutionizing mechanical engineering. AI empowers engineers to tackle complex challenges with greater efficiency, innovation, and precision. By leveraging AI, engineers can enhance design processes, optimize manufacturing, improve maintenance, and drive advancements in various industries, including automotive, aerospace, and healthcare.

Additive Manufacturing (3D printing) is a transformative technology. This technology enables the creation of complex geometries, customized products, and rapid prototyping, revolutionizing industries by improving efficiency and reducing lead times.

The Internet of Things (IoT) is transforming mechanical engineering. By connecting devices and systems, IoT enables real-time data collection, remote monitoring, and predictive maintenance, leading to smarter, more reliable, and sustainable engineering solutions.

Essentially, AI, 3D printing, and IoT are converging to create a new era of innovation and efficiency in mechanical engineering, driving advancements across various sectors.

Sources and related contents:

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Design of Acoustic Containers for Diesel Generators



By:
Engr. Jose Melvin D. Santos
Chapter Past President 2023
PSME-WRSA Jeddah Chapter



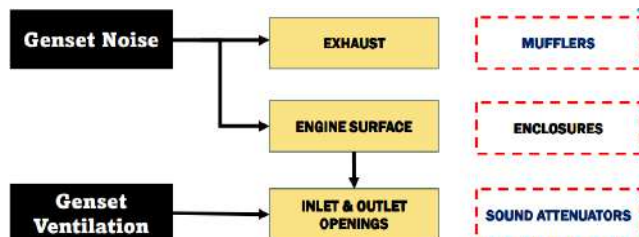
These are custom-built containers that are retrofitted to diesel generators. Mainly, the purpose is to reduce the noise output produced by the generator outside its container while protecting the unit from the harsh environment.

One of the most prevalent occupational health risks is exposure to high levels and unwanted noise. Exposure to excessive noise causes hearing loss and may cause other harmful health effects as well. The extent of damage to humans depends on the intensity of noise and duration of exposure.

The acceptable noise level exposure over a period of 8hrs is 85dB according to the OSHA Hearing Regulations. While an open unit generator produces about 100-120dB of mechanical and exhaust noise when operating on its full load. Generator sets that are installed outdoors may be provided with integral sound attenuated containers. This effectively forms an enclosed space around the set and can effectively reduce the sound level produced by the machine.

This article describes the process of designing acoustic containers having the acceptable resulting noise level while considering the engine's mechanical requirements for ventilation system, exhaust system, and fuel supply when the generator is in operation.

Typical Noise sources of Diesel Generators



- **Genset Noise.** The main parts to cause mechanical noise include the piston, cylinder head, cylinder liner, cylinder block, connecting rod, piston pin, crankshaft, valve gear, drive gear and fuel injection pump. The engine noise originates from the combustion process and mechanical forces associated with engine dynamics and are released through its exhaust and on the engine surface
- **Genset Ventilation.** Air openings that are provided to allow fresh air and hot air discharge required by the engine cooling and combustion also transmit the noise produced by the air flow, radiator fan noise, and engine surface noise

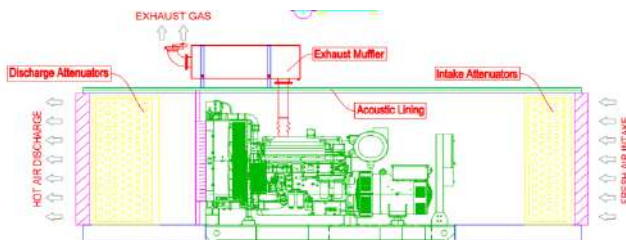


Fig.1: Typical Generator Enclosure GA Drawing

As shown in Fig1, there are different noise mitigating equipment, incorporated into the container design, to make the packaged unit soundproof. We utilize reliable and tested software and input engine and sound data that are provided by the diesel generator manufacturer to

design suitable sizes, dimensions, pressures and grades of the following equipment:

- Intake and Discharge Sound Attenuators are placed along the air stream to treat the noise as the air is discharged to the atmosphere or drawn inside the container.
- Acoustic panels are also placed as internal lining on the walls and ceiling of the container to absorb and reduce the sound internally before they are transmitted outside.
- Exhaust Mufflers are also placed along the flue gas stream before they are extracted into the atmosphere.

Ventilation Requirements

This is necessary to extract the heat emitted by the engine or any other equipment out of the room and provides the required air for engine combustion. Poor ventilation design will lead to:

- Hazardous conditions for the personnel working inside.
- High temperatures inside the room will affect the comfort of personnel and the performance of the generator due to overheating.

The total airflow required by the generator room is the sum of air required to extract heat plus the combustion air.

$$V_{\text{room}} = Q_{\text{total}} / (\rho_{\text{air}}) (C_p) (\Delta T) + V_{\text{comb}}$$

Where: V_{room} - required airflow by the gen. room, m³/min

Q_{total} - total heat emitted to the room, MJ/min

ρ_{air} - density of air, 1.093 kg/m³ @50C

C_p - specific heat, 1.008 kJ/kg/°C @50C

ΔT - designed room temperature rise, 6°C (ASHRAE Handbook)

V_{comb} - combustion airflow genset, m³/min

$$Q_{\text{total}} = Q_{\text{engine}} + Q_{\text{muffler+exh.pipe}}$$

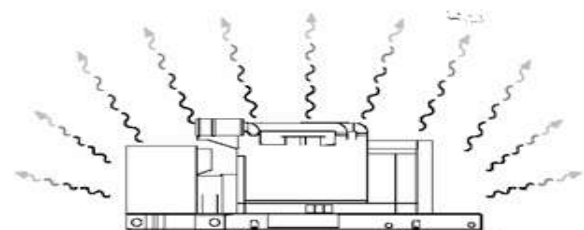


Fig.2: Heat emitted by the engine and alternator

Heat emitted by the engine and alternator as shown in fig.2 can be taken from the engine datasheet as per generator model.

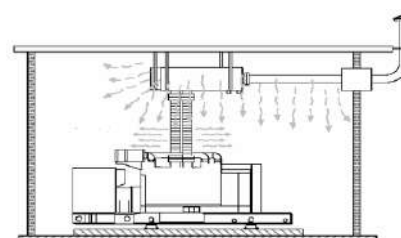


Fig.3: Heat emitted by the muffler and pipe

Design of Acoustic Containers for Diesel Generators

Heat emitted by the mufflers and exhaust pipes as shown in fig.3 can be taken from table1. However, it is always recommended to insulate these mufflers and pipes. And as a rule of thumb, use only 30% of the values provided in table1.

Pipe Diameter Inches (mm)	Heat From Pipe Btu/min/ft (kJ/min/m)	Heat From Muffler Btu/min (kJ/min)
3 (76)	87 (301)	922 (973)
3.5 (98)	99 (343)	1047 (1105)
4 (102)	112 (388)	1175 (1240)
5 (127)	139 (481)	1501 (1584)
6 (152)	164 (558)	1944 (2051)
8 (203)	213 (737)	2993 (3158)
10 (254)	268 (928)	3668 (3870)
12 (305)	318 (1101)	5463 (5764)
14 (356)	367 (1270)	8233 (8686)

Table1: Estimated heat emitted by uninsulated mufflers and pipes

Calculate the Total required airflow (V_{room}) and compare this against the radiator fan airflow (taken from the generator datasheet). The radiator airflow should be greater than the total required airflow (V_{room}). Otherwise, an auxiliary fan must be added to meet the ventilation requirement of the room.

Exhaust Backpressure

The backpressure is calculated for each component in the exhaust line to ensure that the total backpressure along the exhaust system layout does not exceed the maximum allowable backpressure of the engine. An elevated backpressure reduces power output and increases fuel consumption. The exhaust gas flowrate and maximum back pressure are provided in the generator datasheet.

Determine the equivalent back pressure per unit length of exhaust piping by plotting the exhaust airflow against the pipe curve (pipe size) as shown in fig.4.

(As example 5inch & 6inch pipes are used for gas flow of 2715 cfm. Following the lines in the chart, 5inch pipe causes a back pressure of 0.34 inWG per foot and 6inch pipe causes a back pressure of 0.138 inWG per foot.)

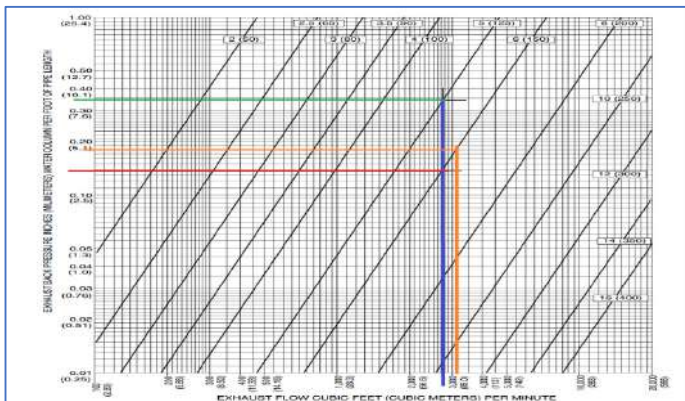


Fig4: Exhaust Gas Pressure in nominal (mm) Pipe Diameters

Measure the length of the straight pipe and determine the equivalent lengths of fittings for the exhaust components using Table2.

TYPE OF FITTING	NOMINAL INCH (MILLIMETER) PIPE SIZE													
	2 (50)	2-1/2 (65)	3 (80)	3.5 (90)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)			
90° Standard Elbow	5.2 (1.6)	6.2 (1.9)	7.7 (2.3)	9.6 (2.9)	10 (3.0)	13 (4.0)	15 (4.6)	21 (6.4)	32 (7.9)	37 (9.8)	43 (11.3)			
90° Medium Radius Elbow	4.6 (1.4)	5.4 (1.6)	6.8 (2.1)	8 (2.4)	9 (2.7)	11 (3.4)	13 (4.0)	18 (5.5)	22 (6.7)	26 (7.9)	32 (9.8)			
90° Long Radius Elbow	3.5 (1.1)	4.2 (1.3)	5.2 (1.6)	6.4 (1.8)	6.8 (2.1)	8.5 (2.6)	10 (3.0)	14 (4.3)	17 (5.2)	20 (6.1)	24 (7.3)			
45° Elbow	2.4 (0.7)	2.9 (0.9)	3.6 (1.1)	4.2 (1.3)	4.7 (1.4)	5.9 (1.8)	7.1 (2.2)	10 (3.0)	12 (3.7)	15 (4.6)	17 (5.2)			
TEE, Side Inlet or Outlet	10 (3.0)	12 (3.7)	16 (4.9)	18 (5.5)	20 (6.1)	25 (7.6)	31 (9.4)	44 (13)	56 (17)	67 (20)	78 (23.8)			
18 inch Flexible Tube	3 (0.9)	3 (0.9)	3 (0.9)	3 (0.9)	3 (0.9)	3 (0.9)	3 (0.9)	3 (0.9)	3 (0.9)	3 (0.9)	3 (0.9)			
24 inch Flexible Tube	4 (1.2)	4 (1.2)	4 (1.2)	4 (1.2)	4 (1.2)	4 (1.2)	4 (1.2)	4 (1.2)	4 (1.2)	4 (1.2)	4 (1.2)			

Table2: Equivalent lengths of pipe fittings in feet (meters)

Add all the back pressures of each component of mufflers, fittings, and pipes. The total back pressure of the exhaust should not exceed the maximum exhaust back pressure of the engine provided in the generator datasheet.

- Flexible pipe = Length (ft) x Backpressure (inWG/ft)
 - Elbow 90 = Equivalent Length (ft) x Backpressure (inWG/ft)
 - Exh. pipe = Length (ft) x Backpressure (inWG/ft)
 - Muffler = Backpressure (in WG)
- TOTAL _____ inWG**

Tank Selection

Fuel storage tanks are essential to Diesel Generator to ensure uninterrupted fuel supply and keep the engine running especially during emergencies and power outage.

A Sub-base Tank (skid tank) may be used if the space available is limited and it is also advantageous as it forms part of the packaged unit. However, one should consider also the expected hours of operation the unit shall be used. Typical sub-base capacity is just 6-hrs of supply to generator at full load without refueling.

A Day Tank is recommended for an 8-24 hrs. operation. In the case of multiple generators sets, the units may be fed from 1 day tank with a capacity sized according to the number of generators and their total fuel consumption per hour.

Sub-base Tank Cap. = Fuel Consumption x 6 hrs

Min. Daily Tank Cap. = Total Fuel Consumption of Generator(s) x 8 hrs

Note: Fuel Consumption is provided in the generator datasheet. Typically, a 100kw generator consumes about 25-27 liters per hour.

Below is a sample generator data sheet

PACKAGE PERFORMANCE				
Performance	Standby		Prime	
Frequency	50 Hz	60 Hz	50 Hz	60 Hz
Genset Power Rating	165.0 kVA	187.5 kVA	150.0 kVA	168.8 kVA
Genset power rating with fan @ 0.8 power factor	132.0 kW	150.0 kW	120.0 kW	135.0 kW
Emissions	Low BSFC			
Performance Number	P4200A	P4202A	P4200A	P4202A
Fuel Consumption				
Fuel Tank Capacity, litres (US gal)	349 (92.2)			
100% load with fan, L/hr (gal/hr)	35.1 (9.3)	41.1 (10.9)	32.4 (8.6)	37.5 (9.9)
75% load with fan, L/hr (gal/hr)	27.2 (7.2)	31.5 (8.4)	24.9 (6.6)	28.9 (7.6)
50% load with fan, L/hr (gal/hr)	18.3 (4.8)	21.8 (5.8)	16.6 (4.4)	19.7 (5.2)
Cooling System ¹				
Radiator air flow, m ³ /min (cfm)	258.2 (915.4)	316.2 (1116.7)	258.2 (915.4)	316.2 (1116.7)
Total coolant capacity, L (gal)	21.0 (5.5)			
Inlet Air				
Max. Combustion Air Inlet Restriction, kPa (in H ₂ O)	3.0 (12.0)			
Combustion air inlet flow rate, m ³ /min (cfm)	10.7 (377)	15.0 (529)	10.0 (354)	14.4 (509)
Max. Allowable Combustion Air Inlet Temp, °C (°F)	50 (122)			
Exhaust System				
Exhaust stack gas temperature, °C (°F)	484 (903)	427 (785)	484 (903)	427 (785)
Exhaust gas flow rate, m ³ /min (cfm)	26.9 (902)	32.2 (1137)	23.9 (843)	31.9 (1125)
Exhaust system backpressure (maximum allowable), kPa (in H ₂ O)	6.0 (1.8)	15.0 (4.4)	18.0 (5.3)	15.0 (4.4)
Heat Rejection				
Heat rejection to jacket water, kW (Btu/min)	75.7 (4306)	80.1 (4555)	66.1 (3680)	73.5 (4180)
Heat rejection to alternator, kW (Btu/min)	16.2 (560)	11.1 (631)	16.2 (560)	11.1 (631)
Heat rejection to atmosphere from engine, kW (Btu/min)	22.4 (1274)	23.4 (1331)	19.9 (1132)	20.8 (1163)

References:

- Cummins Application Manual
- Occupational Noise Exposure article, www.osha.gov/noise
- Generator Datasheet

Did you know?

German inventor **Rudolf Diesel**, patented his design in 1892 and 1893. He initially aimed for an engine that could achieve a theoretical 75% thermal efficiency, far surpassing the 10% efficiency of the steam engines dominant at the time.



The Need for an Ecology System



by:
Engr. Julius M. Cañeca, PME,
RMP

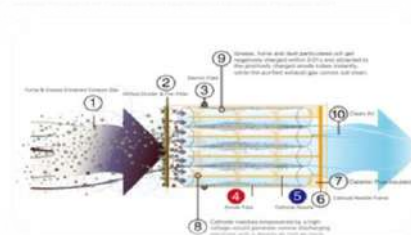
Did you know?

The most powerful and widespread natural air filters are trees, forests, and other plants.

An **Ecology System** (or **Pollution Control Unit - PCU**) is a specialized, multi-stage air purification unit installed in the exhaust ductwork of industrial and commercial kitchens. Its critical function is to remove **grease, smoke, and odors** before the air is vented to the atmosphere. This technology is vital for **environmental compliance** (especially in urban areas), **fire safety**, and **odor mitigation**, making it an essential upgrade over traditional grease filters.

Technical Design and Material Selection

The system's effectiveness relies on a sequential series of filtration stages designed to tackle different types and sizes of airborne contaminants.



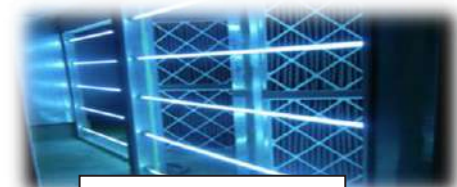
ECOLOGY PROCESS

A. Core Components

Stage	Technology /Component	Primary Function	Material & Efficiency
1: Pre-Filtration	Mesh/Baffle Filters (G2/G4)	Captures large grease droplets and dust to protect downstream components.	Aluminum or Stainless Steel; Washable for low operating cost.
2: Smoke & Fine Grease Removal	Electrostatic Precipitator (ESP)	Ionizes and collects fine smoke and grease particles (down to 0.01 mm) using high-voltage plates.	Aluminum collector plates, Tungsten ionizing wires. Achieves >95% efficiency.
3: Odor Control	Activated Carbon Filters and/or UV-C/UVV System	Adsorbs volatile organic compounds (VOCs) and gaseous odors (Carbon). Oxidizes residual grease and odors with high-energy light (UV).	Granular Activated Carbon (in cartridges) or specialized UV Lamps.
4: Air Movement	Exhaust Fan	Provides the necessary airflow against system resistance.	High-efficiency IE3 Plug Fan with backward-curved impellers; mounted in the unit casing for noise reduction.



ECOLOGY SYSTEM



UV SANITIZER



CARBON FILTERS

System Construction

The casing is typically **Double-Skin Galvanized Steel (GI)** or **Stainless Steel (SS 304/316)**, often insulated with **Rockwool** for thermal and acoustic isolation. Stainless steel ductwork is required downstream of the hood for fire safety (NFPA 96 compliance).

Engineering Calculation Basics

1. A. Airflow Rate Determination (CFM)

The volume of air to be exhausted is determined by the hood's size and the **heat/grease load** from the cooking equipment. This is calculated using an exhaust rate factor:

Airflow Rate (CFM) = Hood Length (ft) x Exhaust Rate Factor (CFM/ft)

Cooking Load	Example Factor (CFM/ft)
Medium-Duty (Griddles, Fryers)	200 - 300
Heavy-Duty (Charbroilers, Woks)	300 - 500

B. Total Static Pressure Drop (Delta P)

The fan must be powerful enough to overcome the total resistance of all components, which includes the hood, all filters, ductwork, and accessories.

$\Delta P_{\text{Total}} = \Delta P_{\{\text{Components}\}}$

A high-efficiency PCU, due to its multi-stage nature, generates a significant pressure drop, often requiring a fan capable of handling a **Total Static Pressure** between **2.5 to 5.0 inches of water gauge (in. wg)** or more.

Advantages and Return on Investment (ROI)

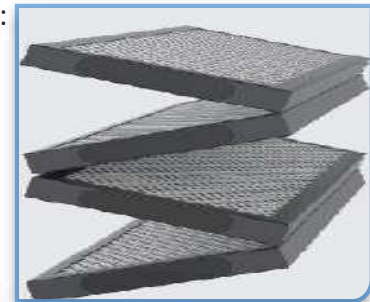
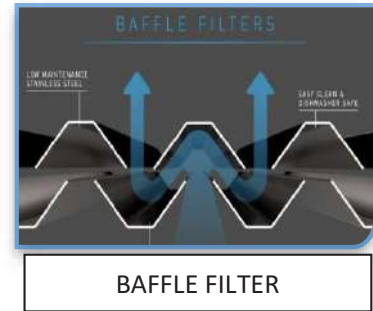
Key Advantages

- ✓ **Enhanced Fire Safety:** Drastically reduces grease buildup in the duct and on the fan impeller, which is the primary source of kitchen duct fires.
- ✓ **Regulatory Compliance:** Meets stringent local environmental codes for smoke and particulate matter discharge, avoiding fines and shutdowns.
- ✓ **Odor Control:** Eliminates cooking smells, making the location suitable for mixed-use buildings or urban areas.
- ✓ **Reduced Maintenance Costs:** Clean air minimizes the required frequency and cost of professional duct cleaning, a major operational expense.

ROI and Payback Period

- **Savings on Duct Cleaning:** Ecology units can reduce the frequency of expensive deep cleaning (which can cost thousands annually) and minimize the labor required.
- **Energy Efficiency:** Systems utilizing **washable ESP cells** and high-efficiency **IE3 motors** offer excellent energy performance and eliminate the recurring cost of replacing disposable filters.
- **Risk Avoidance:** Preventing a single duct fire or avoiding a major regulatory fine provides a sudden and substantial return on the investment.

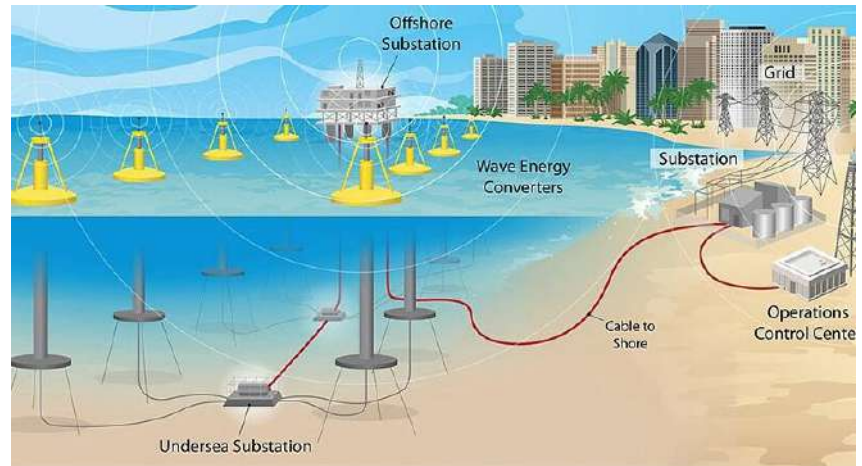
Typical Payback Period: Depending on the scale of the operation and local cleaning/compliance costs, the payback period for a modern ecology unit is typically **3 to 5 years**, realized primarily through savings on duct cleaning and risk mitigation. The investment ensures uninterrupted operation and a positive relationship with neighbors and regulators.



Harnessing the Philippine Archipelago's Wave Power and Review of Wave Energy Development: A Challenge to Filipino Mechanical Engineers



by:
Napoleon M. Cepriaso, PME, AE



Introduction: The Untapped Potential

The Philippines, an archipelago nation, possesses one of the world's most energetic and extensive coastlines. While solar and wind power are making significant inroads, the vast, predictable kinetic energy contained in ocean waves represents an enormous, largely untapped renewable resource. Wave energy converters (WECs) capture this mechanical energy—derived from the wind's interaction with the ocean surface—and transform it into usable electricity via various Power Take-Off (PTO) mechanisms. Unlike solar and wind, waves are inherently predictable days in advance, offering a high-capacity factor that can significantly stabilize the grid.

For mechanical engineers, the development of WEC technology is not just an academic exercise but a strategic imperative. The design, deployment, and maintenance of these robust, ocean-going machines present a unique and complex challenge, demanding expertise in hydrodynamics, structural integrity, corrosion resistance, and advanced control systems. This is about the historical development of wave energy, knowing the technical and financial hurdles, and outlines the current state of high Technology Readiness Level (TRL) devices for localized adoption and progress, if ever.

Brief History Timeline of Wave Energy

The pursuit of wave energy conversion spans over two centuries, often progressing in bursts of activity corresponding to global energy crises and governmental support. The path to its commercialization is riddled with interconnected technical, operational, and financial hurdles that have slowed its scaling compared to mature technologies like offshore wind. The timeline below highlights key milestones.

1799 First known patent filed by the Frenchman M. Girard, proposing a device for using wave energy to drive pumps for irrigation. This established the foundational concept of mechanical wave capture.

1940s Yoshio Masuda of Japan pioneered modern wave technology, developing the Oscillating Water Column (OWC) for powering navigation buoys. Many regard him as the father of modern wave energy.

1965 Masuda's wave-charged buoys entered commercial production, marking the first successful commercial application of a WEC device.

1970s The global oil crisis spurred significant governmental and scientific interest. Stephen Salter (UK) developed the highly efficient Salter's Duck, a key Point Absorber concept, igniting international R&D.

2000 The LIMPET (Land Installed Marine Powered Energy Transformer) OWC device was installed on the island of Islay, Scotland. This was the first commercial-scale WEC connected to a national electricity grid (500 kW capacity).

2003 Establishment of the European Marine Energy Centre (EMEC) in Orkney, Scotland. This centralized, grid-connected test facility became critical for proving WEC survivability and performance.

2004 Deployment of the Pelamis (Attenuator-type) device, a high-profile technology that demonstrated multi-megawatt-scale power generation, though it was later retired due to technical and financial setbacks.

2010s A shift towards achieving higher Technology Readiness Levels (TRL 7+) by focusing on survivability, PTO efficiency, and cost reduction, rather than pure power output. Devices like CorPower Ocean and WaveRoller advance testing.

2016 First long-term operation of a grid-connected wave energy array (EcoWave Power) in Gibraltar, operating under a Power Purchase Agreement (PPA), demonstrating commercial viability for nearshore applications.

2023 The EWP-EDF One project (EcoWave Power) at the Port of Jaffa, Israel, became the first wave energy installation connected to the national electrical grid in the Middle East, highlighting on-shore deployment success.

Technical and Operational Challenges

Survivability and Extreme Loads: WECs must be designed for dual objectives: high efficiency during normal sea states and high survivability during extreme storm events. The stochastic nature of waves means devices must withstand non-linear forces, fatigue loading, and transient shock loads that can lead to catastrophic mechanical failure. The challenge of engineering is designing a structure (and mooring system) that is robust yet light

and economical.

Power Take-Off (PTO) Optimization: The primary mechanical challenge lies in efficiently converting the highly irregular, low-speed, high-force motion of the waves into continuous, high-quality electricity. The PTO system (often hydraulic or direct-drive electric) must manage rapid reversals in force and velocity. An optimized PTO requires complex control algorithms to “tune” the device to the incoming wave frequency (often called reactive control), maximizing energy capture across various sea conditions.

Marine Environment Degradation: Corrosion, particularly galvanic corrosion in submerged metallic components, is constant. Biofouling (the accumulation of marine organisms) affects hydrodynamic performance and increases maintenance complexity. Operations and maintenance (OPEX) are significantly higher than terrestrial systems due to the need for specialized marine vessels, skilled diving teams, and narrow weather windows for repairs.

Financial Hurdles

The most critical barrier is the current Levelized Cost of Energy (LCOE) of wave power, which is significantly higher than established renewables (wind and solar). This is primarily driven by three factors:

1. **High Capital Expenditure (CAPEX):** The costs of designing and manufacturing WECs to withstand the ocean environment are substantial. Fabrication, specialized components (e.g., seals, bearings, hydraulics), and deep-sea mooring systems require immense upfront investment.
2. **Lack of Economies of Scale:** The industry is fragmented, with many competing technologies. This lack of standardization prevents mass manufacturing and supply chain maturity, keeping unit costs high.
3. **High Insurance and Project Risk:** Since most wave projects are “first-of-a-kind” (FOAK), investors perceive them as high-risk. Insurance premiums and financing costs are therefore punitive, further escalating the LCOE. Securing a \$100M project to reach TRL 9 is common, highlighting the immense financial barrier to entry.

Update on Current Technology with High TRL

Despite the challenges, several WEC concepts have reached high TRLs (typically, TRL 7–9, indicating full-scale prototype demonstration in an operational environment). They are broadly categorized by their mode of energy capture:

Oscillating Water Columns (OWCs): These technologies enclose a volume of air above a column of water in a fixed or floating structure. Wave action alternately compresses and decompresses the air, driving a bidirectional self-rectifying turbine (like a Wells or Denniss-Auld turbine). The Mutriku Wave Power Plant in Spain, integrated into a harbor breakwater, operates 16 small OWC chambers. While its output is modest, its integration into civil infrastructure and long-term operation showcase TRL 8 maturity.

Point Absorbers: These are floating structures (buoys) that absorb energy from all directions, oscillating or reacting to the relative motion of the wave crests and troughs. Energy is captured via the relative motion between internal components or between the buoy and the seabed. CorPower Ocean (Sweden/Portugal). Their C3 and C4 systems are small, highly efficient buoys using pneumatic power transmission and advanced control systems to resonate with the waves. They have focused heavily on PTO technology, aiming for robust, low-cost maintenance through heave-to-electricity conversion. Their commercial roadmap is aimed at TRL 8.

Attenuators and Surging Devices: Attenuators, like the defunct Pelamis, are snake-like devices that capture energy from the relative motion between hinged sections as they lie parallel to the wave direction. Surging devices, WaveRoller (Finland) are bottom-hinged flaps that operate in shallower water, converting the kinetic energy of wave surge into hydraulic pressure. This device sits on the seabed and pivots a large plate with the horizontal motion (surge) of the waves. Its design minimizes exposure to surface storms, addressing a major survivability concern. Prototypes have demonstrated long-term grid-connected operation (TRL 7+).

Shore-Based Floater Systems: These systems utilize wave motion to raise and lower buoys (floaters) that are attached to existing man-made coastal structures like breakwaters or piers. The mechanical energy generated onshore is transferred to a Power Take-Off (PTO) system located on land, dramatically simplifying maintenance and grid connection. EcoWave Power (Sweden/Israel). Their system employs large floaters that convert wave pressure changes into fluid pressure, driving a hydro- motor and generator located safely on land. This approach simplifies maintenance and leverages existing civil infrastructure, making it highly competitive on LCOE for coastal areas with suitable structures. They have successfully connected arrays to the national grids in Gibraltar (since 2016) and Israel (since 2023), achieving TRL 8.

Recommendations

Given the Philippine geography and energy needs, the following recommendations emphasize localized development and strategic focus:

Prioritize Resource Assessment and Mapping: Before committing to any WEC type, a high-resolution, long-term assessment of the wave resource along the Pacific coast and the Philippine Sea is paramount. This requires deploying specialized data buoys to measure significant wave height, wave period, and directional spread. The correct WEC technology is site dependent.

Focus on Shore-Based and Nearshore Integration: Given the high cost of deep- water moorings and maintenance, initial local R&D should prioritize established OWC technologies integrated into existing or planned coastal protection infrastructure (breakwaters, piers), or innovative shore-based solutions like the EcoWave Power system. This dual-use application can dramatically improve the financial viability of a project.

Develop Local Supply Chains for High-Wear Components: Mechanical engineers should focus on designing and manufacturing robust, easily replaceable, and standardized PTO system components (e.g., hydraulic cylinders, seals, bearings) using local expertise in materials science to combat corrosion and bio-fouling effectively. This lowers OPEX and reduces reliance on expensive imports.

Invest in Advanced Control Systems: The variability of the wave resource makes sophisticated control systems a necessity. Filipino engineers can

leverage their expertise in automation and electronics to develop predictive, reactive control systems that maximize power capture while managing structural loads, a core challenge in the WEC field.

Foster International Partnerships: Partnering with established test centers like EMEC or developers in TRL 7–9 to gain operational data and share lessons learned is crucial for accelerating technology adoption without repeating costly failures.

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About the author:

Napoleon M. Cepriaso is a Professional Mechanical Engineer, ASEAN Engineer, Fellow Awardee, and 2-time TOME Awardee. He is currently the Technical Manager of Cleantech SA, Jeddah, Saudi Arabia. Cleantech SA is a provider of solar and energy-efficient solutions offering services with the most up-to-date innovative approaches in the application of solar and other renewable energy sources.

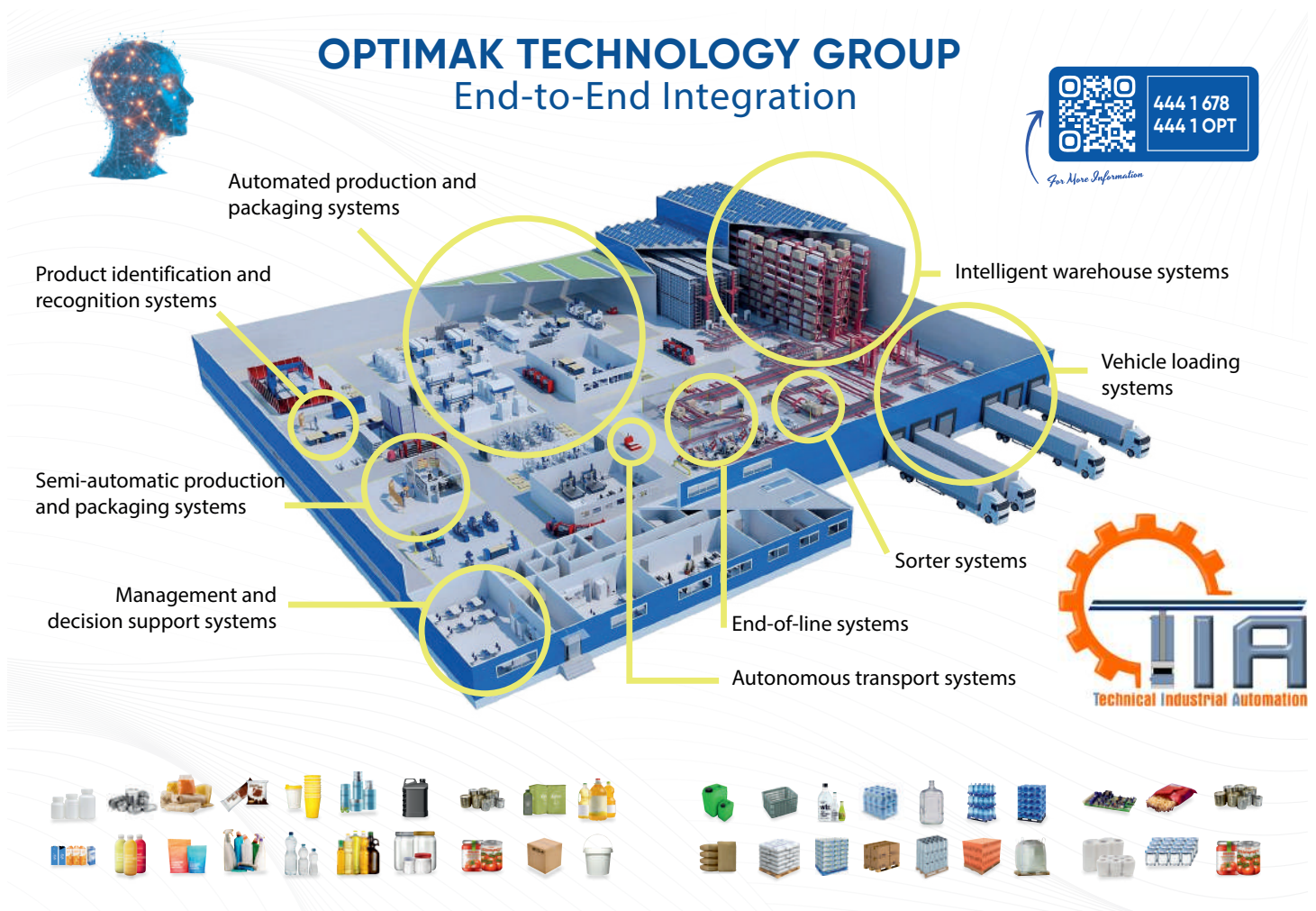
Did you know?

Ocean waves have the highest energy density of all renewable energy sources, including solar and wind. The energy flow just below the ocean's surface is typically 5 to 30 times denser than the wind energy flow 20 meters above the sea surface.

General Information:

PME Code - Article IV - Section 41

Qualification Requirements.- In a government or private institution where a position requires a Masters- degree holder, a holder of professional mechanical engineer license shall be eligible for the position. Likewise, where a position requires a professional mechanical engineers- license, a holder of a masters- or doctorate degree in mechanical engineering, with a registered mechanical engineers- license shall be considered for the position.



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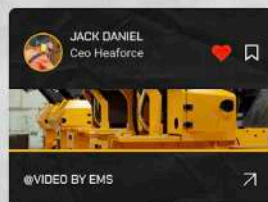
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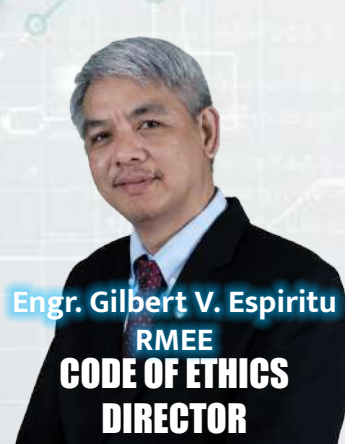


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The collective efforts of our committees have been absolutely instrumental to the success of the 22nd Annual Convention. Our collaborative spirit and unwavering commitment to our shared vision transformed months of planning into this seamless and memorable experience for all of us. This dedicated team of mechanical engineers worked tirelessly behind the scenes, ensuring every aspect—from the meticulous logistics and engaging program content to the warm hospitality and financial oversight—was executed flawlessly.

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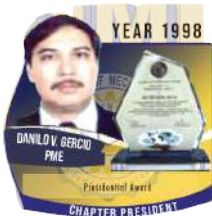
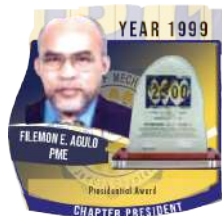
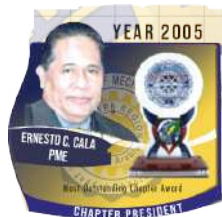
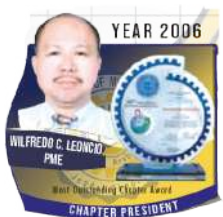
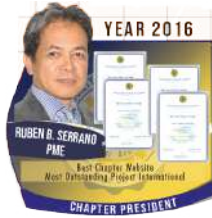


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Opening and Welcome Address

The convention kicked-off with a formal yet warm welcome by Executive Vice President Jobert M. De La Rosa, setting the stage for a day filled with insightful discussions and valuable engagements.

by:

Engr. Jobert M. De La Rosa, PME, AE

21st GMM Conction Chairman



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PSME National President Archelle B. Baculi captivated the audience with an inspiring keynote address, sharing her vision for the future of leadership and innovation.



Inspirational Speakers and Guest of Honor

The afternoon session featured the heartfelt and motivating words of Inspirational Speaker Ms. Narrabelle Z. Bue, Social Welfare Attache, and Guest of Honor Hon. Jules Patrick A. Aguila, Vice Consul and Administrative Officer of Philippine Consulate General Jeddah. Their messages left a lasting impact on the audience. Outgoing National PSME President Jeremy T. Aguinia also shared memorable and reflective remarks, adding a personal touch to the event.



Life Members



Aldrin Alizon D. Lango
ME L-0000111



Amos Joel A. Acosta
ME L-0000591



Liza L. Acosta
ME L-0000592



Badroden A. Balindong
ME L-0000593



Roel Alfon G. Banawis
ME L-0000594



Joselito L. Bentulan
ME L-0000595



Napoleon M. Cepriaso
ME L-0000596



Jobert M. De La Rosa
ME L-0000597



Orlando O. Digma
ME L-0000598



Jemuel B. Esguerra
ME L-0000599



Julius Q. Garcia
ME L-0000601



Greg A. Gulmatico
ME L-0000603



Roseller A. Junsay Jr.
ME L-0000604



Dexter R. Lacson
ME L-0000605



Fernando C. Liao
ME L-0000607



Rodrigo C. Lofamia
ME L-0000608



Mario Ernesto A. Luna
ME L-0000609



Jayson V. Macasaet
ME L-0000610



Rey Anthony D. Mejia
ME L-0000611



Miller F. Narvas
ME L-0000612



Crisostomo C. Ortiz
ME L-0000613



Rainier P. Patawi
ME L-0000614



Wilfredo R. Ruiz
ME L-0000616



Ruben B. Serrano
ME L-0000618



Paulo T. Taruc
ME L-0000619



Mauricio T. Viado
ME L-0000620



Ahmed L. Selim
ME L-0000621



Julius Ceisar P. Castaño
ME L-0000906



Antonio M. Desabille Jr.
ME L-0000907



Jeffrey C. Esperanza
ME L-0000908



Noel L. Fernandez
ME L-0000909



Daniel C. Mendoza
ME L-0000910



Leonilo T. Lucena
ME L-0000964



Dioscoro T. Timtiman
ME L-0002158



Erwin D. Jaradal
ME L-00002992



Isabelo Jr. B. Biscocho
ME L-00001541

Regular and Associate Members



Francis A. Eucapor



Maria May M. Atole



Julius M. Cañeca



Napoleon M. Castañeda



Willyn D. Espino



Donald B. Makalintal



Orlan C. Moriones



Noriel J. Nollora



Oliver O. Salazar



Gerry E. Abellana



Lee I. Bonifacio



Edynil G. Celo



Raffy A. Gange



Ronald G. Gultiano



Niño Jose A. Lopez



John Ray O. Madla



Leonard P. Meriales



Jose Melvin D. Santos



Antonio Jr. M. Bernardo



Melchor B. Campo



Sherwin D. Fransico



Jeru D. Penachos



Marlou P. Paglinawan



Gilbert V. Espiritu



Mark Harold A. Ramirez



Lois Darren P. Bacit



Mark Joseph A. Madolid



John-John P. Solam



John Wesley R. Ang



Anthony C. Bugayong



Wilfredo G. Alingod JR.



Adrian Zeus R. Bituin



Eduardo M. Martinez



Jehel Mark C. Arsenal



Mario Agerio C. Alberca



Leovigildo N. Ferrer Jr.



Joel N. Cadiang



Arvin B. Quitasol



Harold D. Pascua



Carlo M. Esquivel



John Paul A. Garcia



Alex I. Tam



Oliver E. Policarpio



Tammy Daclan



Robchar D. Cataylo



Joel S. Melor



Ryan T. Paguigan



Ramil B. De Mayo



Marvin D. Dalaguit

Linthon G. Francisco

President's Annual Report

Greetings Fellow Members!!!

It is with gratitude and pride that I present this annual report to the PSME WRSA Jeddah Chapter, highlighting our shared accomplishments, the challenges we have overcome, and the collective vision that continues to guide our journey.

- On January 2-3, 2025, we conducted our Kick-Off meeting and Thanksgiving party at The Golden Chalet in Al-Sharouh Jeddah, where we have our relaxation and enjoyment after a year tiring activities. We have also conducted our first BOT's and Kick-off meetings which we formally discussed the turnover of 2024 to 2025. I also presented the annual activities for 2025 which includes technical seminars, plant tours, sports activities, SPLE reviews, Professional Development write-shop for PME, ACPE and AE, and newsletter publication.

- Every year the PSME -WRSA Jeddah Chapter are conducting reviews for SPLE examinees, On December 2024 we officially launched the review session for SPLE examinees for Registered Master Plumber, Certified Plant Mechanic and Mechanical Engineer board exam. The review was given by our Professional Mechanical Engineers and Registered Master Plumber John Ray Madla, Jose Melvin Santos and our Anthony Bugayong.
- On March 28, 2025, we have our First Technical Webinar Titled Pumps Operation, Installation, Maintenance by Engr. Joseph Dioneda Vice President of Triumph Machinery Inc. with more than 30 years of experience with the different types of pumps. The session was practical and easy to understand that can easily grasp by the participants. The event also was graced by our VP for Middle East Engr. Pasciano Defensor that gave his inspirational speech that encouraged our fellow mechanical engineers and participants to continuously learn, stay curious and uphold professionalism.

- On April 18, 2025, we had our Second Webinar titled "Design, Operation and Maintenance of Nitrogen Generator" by Engr. Lawrence P. Baceronia, PME, AEM Manager of DOLE Phils. Inc., He provided participants essential knowledge on design, operation and maintenance Nitrogen Generator in industrial process. He emphasized the cost benefits of having Nitrogen Generator rather using the nitrogen tank. Engr. Jeffrey Vafloir Chairman of MERC gave also his Inspirational speech that reminding the participants to continuously gain knowledge by attending seminars.

- On June 27, 2025, the PSME-WRSA JC successfully had our 3rd Technical Webinar titled "Design, Operation & Maintenance of Sewage Treatment Plant" by Leovigildo N. Ferrer, PME, CEM, a Senior Engineer from Ove Arup & Partners (Cardiff UK Office). The Webinar provided the in-depth knowledge of converting the waste water into environmentally compliant effluent. The webinar was graced also by Ms. Sandra Bonayon, BSN, RN, a Clinical Nursing Director at Dr. Soliman Fakeeh Hospital and currently the Vice President of PPO by giving his inspirational message during the event.

- On June 3rd to 4th 2025, PME aspirant of PSME-WRSA JC took their Oral Technical Evaluation at WA Hotel Jeddah Saudi Arabia, Five (5) on First level and Nine (9) on Second level Oral Technical Evaluation exam.

- On June 8th and 9th 2025, The PSME-WRSA JC Chapter attended 16th MERC at Palazzo Ballroom, Jeddah Saudi Arabia in support to our fellow PSME organization in Jeddah KSA.

- On July 17th and 18th of 2025, We had a thanksgiving party to honor the PME (Professional Mechanical Engineer) passers of Oral Technical evaluation. The event was held at a private resort setting a tone for much needed relaxation to the PME passers who's been preparing tirelessly for their technical Presentation. The following who passed the PME technical Evaluation.

Jose Melvin D. Santos
John John P. Solam
Adrian Zeus R. Bituin
Miller F. Narvas
Oliver O. Salazar
Julius M. Cañeca
Lee I. Bonifacio
Rainer P. Patawi
Jobert M. De La Rosa

- On Friday, July 11, 2025, from 9:00 am to 11:30 am, we had plant tour at Skyline Golden Industrial Co. facility, located at Al Fadeo Street, Ad Dahiah, Khumra, Jeddah 2259. The tour was led by Mubashar Ali Khan, Sales Manager where a detailed manufacturing process of condenser.

- On July 2025, VPI Julius M. Cañeca PME, the chairman of 2025 Mid-Year Convention and General Membership Meeting, presided the event that was held at Emerald Hotel. The convention featured two technical seminars accredited by 4 CPD points. Engr Joel N. Cadiang, PME presented "Introduction to Asset Management" while Edmund A. Azucena presented "Advancing Environment & Sustainability in the Chemical Manufacturing Industry". Adding prestige to the event, the keynote message was delivered by Pasciano Defensor, PME (PSME National VP Middle East) and Inspirational Message was delivered by our PSME National President Archelle B. Baculi. The event was sponsored by REZA Chemical Industry.

- On September 26, 2025, We have conducted our 2nd General Membership Meeting and Election of 2026 Board of trustees at Jiwar Diamond Hotel in Jeddah, Saudi Arabia. The event was presided by Mark Joseph Madolid (Membership Director) Chairman of the 2nd General Membership Meeting and Election of 2026 Board of Trustees. The Convention featured two seminars titled "Ecological Exhaust System for Industrial Kitchen" presented by Engr. Julius M. Cañeca, PME and DTM Joey Villanueva a Guest Speaker presented financial literacy. The General Membership Meeting was concluded with the Election of New BOT's for year 2026. The event was sponsored by Hamad Abdullah Alhuwais.

- The Sports Director Engr. Robchar Cataylo have committed to have a sports activity every month, The first sports event that we had was last 30th of January 2025 at Bowling City Jeddah, Saudi Arabia. Everybody had fantastic time and at the same it's a form of exercise for the members. Every month we had sports activities if possible if those not have conflict with our own schedule. PSME WRSA JC recently participated in the PPO-WRSA 2nd Bowling Tournament held at Bowling City Thaliah, Jeddah. The organization by 2 team and each team have a five members that joined the competition. The competition was successful providing a friendly competition to other professional Organization.

- PSME -WRSA Jeddah Chapter conducted an Orientation for Registered Asean Engineer and Asean Chartered Professional Conducted by Napoleon Cepiaso, PME and John Ray O. Madla, PME. The participant was thought how to prepare their documents and requirements to become an AER and ACPE.

- I represented the PSME-WRSA Jeddah Chapter at 72nd National Convention last October 15-18, 2025 held at SMX Convention Center at Pasay City. I attended the president meeting during the first day where a meet and greet to a fellow representative of PSME different chapter. Attended the opening day for the marching of banners of different chapter of PSME. Attended some of the seminars that they cater and meet some old friend and fellow WRSA that already reside in the Philippines.

On this Convention, we sincerely thank Chairman Engr. Jobert De La Rosa for his dedicated leadership in leading the 22nd Annual Convention and General Membership Meeting under the theme 'Innovating for a Sustainable Future: Advancing Mechanical Engineering in the Age of Smart Technology.' I would like to thank everyone, especially the team WRSA BOT's for their time and support.

God Bless Everyone at Mabuhay ang PSME-WRSA Jeddah Chapter

Orlan C. Moriones, PME, AE, RMP, SO2
2025 Chapter President
PSME-WRSA Jeddah Chapter

2025 Chapter's Activities



Thanksgiving and Kick-off Meeting - January 3, 2025



SPLS Review Sessions



1st Technical Webinar - March 28, 2025



2nd Technical Webinar - April 18, 2025



3rd Technical Webinar - STP Zoom Seminar - June 27, 2025



16th Middle East Regional Conference, Palazzo, Jeddah
June 7-8, 2025



Plant Tour - Skyline Golden Industrial Co., Khunra, Jeddah, KSA
July, 11, 2025



New PME's Thanksgiving Party - July 17, 2025



Midyear General Membership Meeting & Technical Seminar,
Jiwar Jeddah, KSA - August 1, 2025



2nd General Membership Meeting & Election of 2026 BOT, Jiwar,
Jeddah, KSA - September 26, 2025

Thanksgiving And Kick-Off Meeting



On January 03, 2025, we organized Thanksgiving and Kick-off meeting at the GOLDEN CHALET. A private villa in Al-Sharough, Jeddah. It was a well-deserved relaxation and enjoyment thanksgiving after a year of full activities. We also conducted our kick-off meeting, which we formally discussed the turn-over of 2024 to 2025 of the board of trustees. I also presented the annual activities for 2025 which includes technical seminars, plant tours, sport activities, SPLE reviews and examinations, newsletter publications and others that will benefit the general membership.

by: Engr. Orlan C. Moriones, PME, AE
2025 Chapter President



2025 SPLE Review Sessions

"The most technologically efficient machine that man has ever invented is the book."
- Northrop Frye

The Philippine Society of Mechanical Engineers (PSME) Western Region Saudi Arabia (WRSA) - Jeddah Chapter officially launched its Special Professional Licensure Examination (SPLE) Review Sessions in December 2024.

The program commenced with an orientation for reviewees aspiring to become Certified Plant Mechanics (CPM) and Registered Master Plumbers (RMP). The session was led by PSME WRSA-Jeddah Chapter 2025 President Orlan Moriones and the 2025 Board of Trustees (BOTs).

The event detailed the comprehensive subjects and specific schedules for the review sessions, which are strategically tailored to cover all mechanical-related professions under the SPLE. Expert instruction for the review sessions is being provided by Professional Mechanical Engineer (PME) John Ray O. Madla, PME Jose Melvin D. Santos, and PME Anthony C. Bugayong, catering to all RMP and CPM aspirants.

by:
Engr. Anthony C. Bugayong, PME
Press Relation Officer

PSME-WRSA JC
Philippine Society of Mechanical Engineers
Western Region Saudi Arabia Jeddah Chapter

**WE ARE INVITING YOU TO
JOIN OUR REVIEW SESSIONS
FOR THE UPCOMING
SPLE 2025
BE THE NEXT**

- Registered Mechanical Engineer (RMEE)
- Certified Plant Mechanic (CPM)
- Registered Master Plumber (RMP)

Every Friday starting January 3, 2025
9am-12nn, 2pm-5pm

REGISTER NOW!

PSME-WRSA Headquarters,
Faisaliyah Dist. Kick Off Meeting &
Orientation on December 20, 2024

CONTACT US FOR MORE INFORMATION
Engr. Anthony Bugayong - 0503672856
Engr. John Ray Madla - 0536685488



1st Technical Webinar - Pump Operations & Maintenance



On March 28, 2025, We have our first technical Webinar titled Pumps Operation, Installation & Maintenance, by Engr. Joseph Dioneda who works as Vice President in Triumph Machinery, It was a practical and easy-to-understand session that helped participants get a clearer grasp of how pumps work in real situations. He explained the basics in a very approachable way, sharing useful tips and real experiences that made the discussion feel natural and relatable.



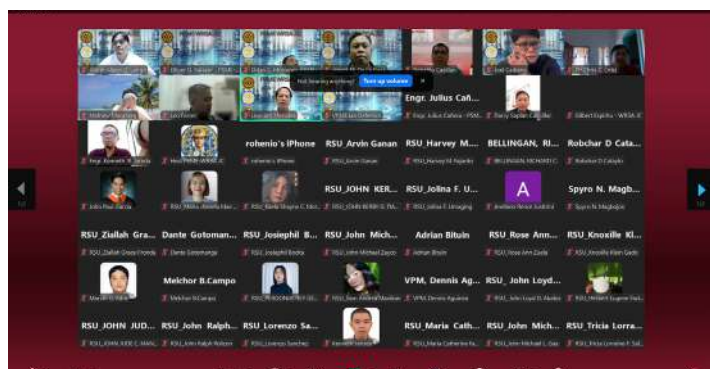
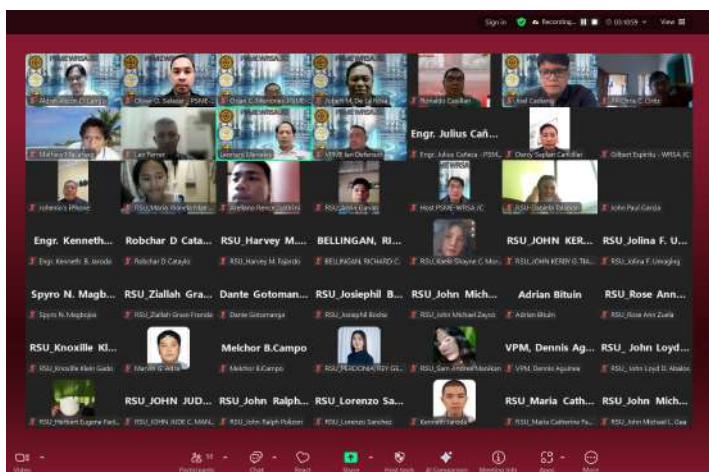
He covered the essentials—proper installation, avoiding common errors, and simple but effective maintenance habits like checking for leaks, ensuring proper lubrication, and paying attention to unusual vibrations. His clear explanations made even technical topics easy to digest.



The event also featured an inspirational message from VPME Pasciano Defensor (PME, AE), who encouraged participants to continuously learn, stay curious, and uphold professionalism in their work. He reminded everyone that even small improvements in skill and understanding can lead to big impacts on safety, efficiency, and career growth. His message set a positive tone and motivated attendees to apply what they learned with confidence and dedication.

Overall, the seminar was both informative and uplifting and was huge success and with total attendees of 92 people.

by:
Engr. Orlan C. Moriones, PME, AE
2025 Chapter President



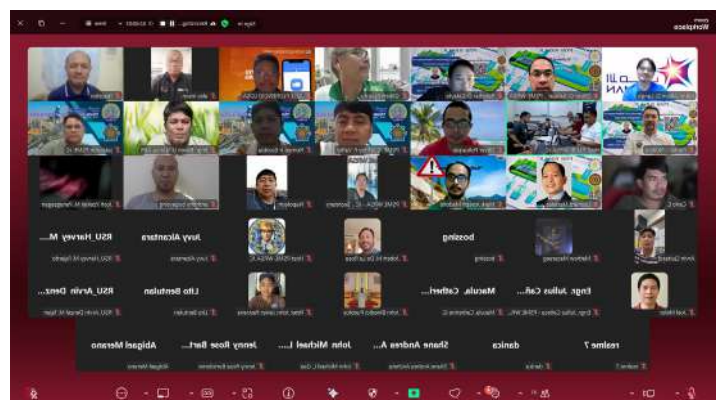
2nd Technical Webinar - Design, Operation, and Maintenance of Nitrogen Generation



On April 18, 2025, a technical webinar focusing on the Design, Operation, and Maintenance of Nitrogen Generators was successfully conducted by the PSME WRSA JC. The session, led by Lawrence P. Bacelonia, PME, AEM Manager at Dole Philippines Inc., provided participants with essential knowledge on the industrial process of nitrogen generation. The presentation covered critical aspects ranging from the fundamental design principles and efficient operational procedures to effective maintenance strategies necessary for ensuring the longevity and optimal performance of nitrogen generation equipment. This initiative aligns with the professional society's mission of "Enhancing Competence For International Recognition."

A Nitrogen Generation System (NGS) provides a continuous, on-demand supply of high-purity nitrogen, eliminating the need for bulky, high-pressure cylinders or expensive liquid nitrogen deliveries. Compressed air passes through the PSA unit where carbon molecular sieves (CMS) preferentially adsorb oxygen and other trace gases, allowing the nitrogen to pass through to a storage tank. In membrane systems, air is pushed through hollow fibers that selectively permeate oxygen, letting the purer nitrogen exit the other end. NGS operation is fully automated and requires only a reliable compressed air source and electricity.

by:
Napoleon M. Cepriaso, PME, AE
2016 Fellow Awardee
2012 PSME-WRSA Jeddah Chapter President
2011 & 2002 TOME Awardee



3rd Technical Webinar - Design, Operation & Maintenance of Sewage Treatment Plant

PSME-WRSA Jeddah Chapter
FREE TECHNICAL WEBINAR
Design, operation & maintenance of Sewage Treatment plant
With approved 2 cpd points
BY Engr. LEOVIGILDO N. FERRER JR., -PME, CEM SENIOR MECHANICAL ENGINEER
Ove Arup & Partners - Cardiff UK Office
June 27, 2025 VIA ZOOM 9:30 AM SAUDI ARABIA TIME
FOR INQUIRIES PLEASE CONTACT THE FF:
Joel N. Cadiang-PME, 0558620313
Mark Harold Ramirez-RMEE, 0506521629
"Enhancing Competence for International Recognition"

On June 27, 2025, the PSME WRSA JC successfully hosted a specialized Technical Webinar via Zoom, focusing on the Design, Operation, and Maintenance (DO&M) of Sewage Treatment Plants (STPs). The session, accredited for 2 CPD points, was presented by Engr. Leovigildo N. Ferrer Jr., PME, CEM, a Senior Mechanical Engineer from Ove Arup & Partners (Cardiff UK Office). The webinar provided an in-depth exploration of the engineering principles and processes necessary for effective wastewater management, specifically detailing the stages required to convert raw sewage into environmentally compliant effluent. This educational activity underscored the society's commitment to "Enhancing Competence For International Recognition" by promoting advanced technical expertise in essential environmental infrastructure.

The seminar concentrated on the design of an on-site Sewage Treatment Plant (STP) for a residential development in Metro Manila. The design utilizes the Moving Bed Biofilm Reactor (MBBR) technology to ensure compliance with the DENR General Effluent Standards (DAO 2016-08).



DENR General Effluent Standards (DAO 2016-08).

The MBBR is a high-performance biological treatment system ideal for locations with limited space. It works by using a reactor tank filled with specialized plastic media carriers (HDPE) that host a beneficial microbial biofilm. An aeration system mixes the carriers and supplies oxygen to the microbes, which break down contaminants. A key advantage is that MBBR is a single-pass system and does not require Sludge Recycle (RAS), making the plant design simpler than conventional methods.

The STP operation involves three main stages:

Preliminary: Screening and grit removal.

Primary: Sedimentation.

Secondary/Biological: Aeration and organic matter breakdown by the MBBR microbes. The process concludes with final disinfection (e.g., chlorination/UV) to make the treated water safe for discharge or reuse.

MBBR maintenance is typically simpler than conventional systems. It involves routinely monitoring Dissolved Oxygen (DO) levels and inspecting the air blowers and effluent sieves. The system is highly robust and handles sudden changes in sewage flow (shock loads) well due to the protected, stable biofilm.

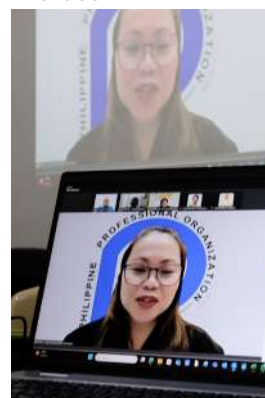
by:

Napoleon M. Cepriaso, PME, AE

2016 Fellow Awardee

2012 PSME-WRSA Jeddah Chapter President

2011 & 2002 TOME Awardee



New PME's Thanksgiving Party



On July 17th and 18th of 2025, we hosted a special thanksgiving celebration to honor the colleagues who successfully passed the recent PME (Professional Mechanical Engineer) evaluation.

The event was held at a private resort, providing an exclusive and relaxed setting for the celebration. A highlight of the gathering was the community potluck, where all PMEs and their guests contributed a variety of shared dishes.

Key logistical responsibilities were managed by:

- Venue Scouting and Arrangement: Engr. Noriel
- Program Development and Execution: Engr. John-John

The celebration was a resounding success, marked by a great night of fellowship, sharing, and memorable moments. The festivities concluded with a raffle draw, distributing prizes to all attendees as a final note of appreciation.

- AP of PSME WRSJ JC



On Friday, July 11, 2025, from 9:00 AM to 11:30 AM, a detailed manufacturing process tour was conducted at the Skyline Golden Industrial Co. facility, located at Al Fadeo street, Ad Dahiah, Khumra, Jeddah 22529. The tour was expertly led by Mr. Mubashar Ali Khan, Sales Manager.

Given that the day was a rest day for operators and employees, the 2.5-hour session focused on a technical explanation of the static production lines and equipment. Mr. Khan began the tour by explaining the Engineering and Design Center's role in translating client orders into custom solutions using thermal modeling. The flow then proceeded to the Raw Material Stockyard, where the quality of copper, aluminum, and stainless steel was highlighted, followed by the Coil Fabrication Line, detailing processes like tube expansion crucial for product efficiency. Next, the focus shifted to the Brazing & Welding Station and Heat Exchanger Fabrication, explaining the critical joining techniques for headers and the assembly of complex units like Shell & Tube and Cooling Tower Coils. Finally, the tour concluded by detailing the Quality Control & Testing Lab's rigorous verification protocols (e.g., pressure testing) and the company's logistics and packaging procedures.

The informative session ended with a comprehensive Q&A where Mr. Khan fielded questions covering everything from raw materials and order management to final delivery. Before the final conclusion, there was a special awarding of a plaque of appreciation to Mr. Khan for his leadership and detailed presentation. The successful event wrapped up with a group photoshoot at 11:30 AM.

by:

Julius M. Cañeca, PME, RMP

2025 Mid-year Convention & GMM Chairman

VP Internal Affairs



16th PSME Middle East Regional Conference

2025 Midyear Convention & General Membership Meeting



The Philippine Society of Mechanical Engineers (PSME) - Jeddah Chapter, known for its distinguished history as a “Most Outstanding Chapter” in multiple years, successfully organized its 2025 Mid-Year Convention & General Membership Meeting (GMM) under the theme, “Enhancing Competence For International Recognition”. The event is scheduled to begin at 8:30 AM with participant registration. The opening formalities include prayers and national anthems before the **FORMAL OPENING OF THE MID-YEAR CONVENTION**, which is led by the Mid-Year Convention Chairman, Engr. Julius M. Caneca, PME, RMP. This segment also features the Welcome Address from the 2025 Chapter President, Orlan C. Moriones, PME, AE, RMP.

The core of the convention is focused on technical and professional development, highlighted by two in-depth technical presentations. The first session delves into the “Introduction to Asset Management,” delivered by Engr. Joel N. Cadiang, PME. Following a sponsor introduction and awarding from Reza Hygiene - Chemical Industry and a scheduled lunch break, the second presentation covers “Advancing Environment & Sustainability in the Chemical Manufacturing Industry,” presented by Mr. Edmund A. Azucena. Adding prestige to the event, the Keynote Message is delivered by Pascasio Defensor, PME, the

PSME National VP for Middle East.

The latter half of the program is dedicated to the essential administrative and inspirational segments, primarily the General Membership Meeting (GMM). After the recitation of the PSME Creed and Core Values, the GMM commences with the Call to Order and verification of attendance for quorum. A significant moment is the Message of the Inspirational Speaker, who is none other than the PSME National President, Engr. Archelle B. Baculi, PME. Following this, the Membership Directors’ Report is provided by Mark Joseph A. Madolid, RMEE.

The convention concludes with the final steps of the General Membership Meeting, which include addressing Other Matters and Announcements by Leonard P. Meriales, PME, AE, RMP. The Adjournment of GMM at 4:02 PM is presided over by Chapter President Orlan C. Moriones. Finally, Jobert M. De La Rosa, PME, delivers the Closing Remarks, successfully wrapping up the comprehensive program designed to bolster the competence and international standing of the Mechanical Engineers in the region.

by:

Julius M. Cañeca, PME, RMP
2025 Mid-year Convention & GMM Chairman
VP Internal Affairs



2nd General Membership Meeting & Election of 2026 BOT



On September 26, 2025, PSME-WRSA successfully conducted its 2nd General Membership Meeting alongside the 2026 Board of Trustees Elections at the Jiwara Diamond Hotel in Jeddah, Saudi Arabia. The event was made possible through the support of Hamad Abdullah Alhuwais Company Ltd., represented by Mr. Preetham G. Acharya and Mr. Mohamed Akram Anzar. The meeting commenced at 8:30 AM with 26 attendees out of the 55

members based in Jeddah. With more than 30% attendance, quorum was achieved, allowing the session to proceed smoothly and officially.

The program featured a well-rounded set of activities, including:

- A technical seminar
- A guest speaker session
- A product presentation from the event sponsor
- An inspirational keynote message delivered via Zoom by Engr. Jeresty B. Ramillano

The technical presentation, "Ecological Exhaust System for Industrial Kitchen," was delivered by Engr. Julius M. Cañeca, Vice President for Internal Affairs. This was followed by an engaging and insightful talk by DTM Joey Villanueva, who addressed the timely and essential topic of financial preparedness among Overseas Filipino Workers. His discussion on determining how much is enough for financial freedom and the computations behind it provided valuable guidance to members seeking long-term financial security.

As the General Membership Meeting concluded, the assembly transitioned into the Election of the 2026 Board of Trustees. The process was presided over by the COMELEC, composed of Chairman / IPP Engr. John Ray Madla, PP Engr. Aldrin Alizon D. Lango, and PP Engr. Jomel Santos.

With the successful election of the 2026 Board of Trustees, the event came to a close—marking not just the end of a meeting, but the beginning of a new chapter for PSME-WRSA. The organization continues to move forward with renewed leadership, strengthened commitment, and a vision for continued growth in the coming year.

by:

Engr. Mark Joseph A. Madolid, RMEE, RMP
Membership Director
2nd GMM and Election of 2026 BOT Chairman



2025 Sports Activities

PSME WRSA JC SPORTS BOWLING (30th January 2025)

Day of Fun, Sports, and Fellowship!

Our Sports Day featured a striking array of physical action held at Bowling City Jeddah ensuring there was something for everyone to enjoy, the fun day of the 1st Sports Event for this year's program. The energy was profound as everyone cheered on their fellows, creating an atmosphere of support and enthusiasm. It was enjoyable that the members had a fantastic time, and their joy was mirrored by their faces. The evening was a delight even though just few were joined for we are grateful for the successful sports event and give thanks to the Almighty for this day. We will do again another set of events for the coming months



PSME WRSA Jeddah Chapter recently participated in the PPO-WRSA 2nd Bowling Tournament, held on Friday, November 7, 2025, at Bowling City, Thaliah, Jeddah. Our organization was proudly represented by a 5-member mixed team that joined the competition, which included both Rated and Non-Rated categories. The tournament was a massive success, providing a great opportunity for our members to engage in friendly competition, showcase their bowling skills, and strengthen camaraderie outside of the workplace. Everyone had a fantastic time joining the excitement and fun!

by:

Engr. Robchar D. Cataylo, RMEE
Sports Director



2024 - 2025 PME Journey

"Success is a journey, not a destination." - Arthur Ashe



On December 12, 2024, eleven (11) mechanical engineers from PSME-WRSA took a significant step in their professional journey by attending the Technical Evaluation for the Upgrading as Professional Mechanical Engineer held in Al-Khobar, Saudi Arabia. This rigorous evaluation was conducted by the Board of Mechanical Engineering (BME), headed by Hon. Chairman Rodulfo L. Tablante, alongside with the Philippine Regulatory Commission (PRC).

them to celebrate their journey, reflect on their experiences and momentarily set aside the pressure of the day while sharing camaraderie and laughter.

This milestone in their engineering path reflects their pursuit of excellence, professional growth, and readiness to take on greater responsibilities in the industry. Their dedication serves as an inspiration for aspiring mechanical engineers aiming to achieve higher credentials in the field of mechanical engineering.



Among the aspirants, nine engineers took the first-level evaluation, demonstrating their technical expertise, industry experience, and commitment to advancing their career. On the other side, two engineers advanced to the final (second level) evaluation, a crucial stage in their path toward professional mechanical engineer upgrading.

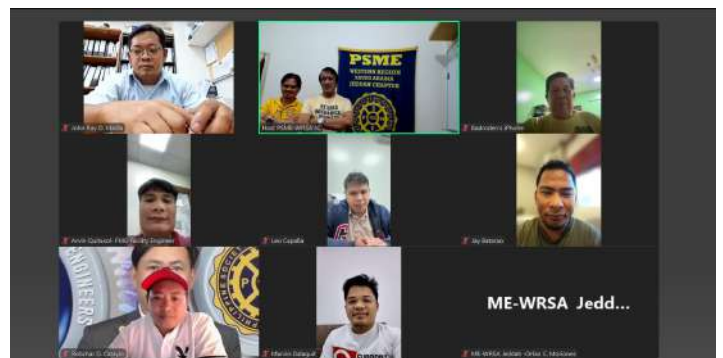
The first-level evaluation successfully passed by the nine (9) engineers and on their way onwards in the completion of their Technical Engineering Report. While, the release of result for the successful second level evaluation is on February 2025. Cheers PSME-WRSA!

After the intense and high-stakes interview process, the eleven engineers took the opportunity to unwind and relax. They roamed the scenic Al-Khobar seaside, enjoying the refreshing sea breeze and picturesque views. This well-deserve break allowed

by:
Engr. Leonard P. Meriales, PME, AE, RMP
Information Technology Director



PME Workshops, AER, and ACPE Orientation



2025 PME Oath-taking



Philippine Embassy Hosts Mass Oath-Taking Ceremony

RIYADH, KSA – On September 12, 2025, a significant gathering of Filipino professionals took place at the Philippine Embassy Cultural Center in Riyadh, Kingdom of Saudi Arabia, for a Mass Face-to-Face Oath-Taking Ceremony. Hosted by the Philippine Professional Organization (PPO) Riyadh Chapter, the event celebrated the newly passed Professional Mechanical Engineers (PMEs) alongside successful examinees from various other professional disciplines across the entire Kingdom.

Part I: The Solemn Ceremony (9:00 AM – 11:00 AM)

The morning session, held from 9:00 AM to 11:00 AM, was dedicated to the formal administration of the professional oath.

The esteemed presence of Embassy officials and leaders from the PPO Riyadh Chapter underscored the importance of the event, which served as a unifying platform for Filipino excellence in the Middle East. Although primarily honoring the new Professional Mechanical Engineers, the ceremony welcomed professionals from diverse fields, fostering a spirit of inter-disciplinary camaraderie and mutual support. The ceremony concluded with a celebratory atmosphere, featuring an official picture-taking session to capture the historic moment. Following the formal proceedings, the PPO Riyadh Chapter, acting as the host organization, generously provided a prepared lunch for all attendees and their guests, allowing for networking and shared celebration.

Part II: Streamlining Professional Licensure (1:00 PM Onwards)

The afternoon marked the second critical phase of the day: the immediate processing of the professional license cards. Commencing at 1:00 PM, this highly convenient service was facilitated within the function hall of the Philippine Embassy, providing the new professionals with a streamlined process to finalize their licensure requirements on the spot.

This strategic arrangement, made possible through the collaboration between the Philippine Embassy and the PPO Riyadh Chapter, minimized travel and time constraints for professionals who traveled from all corners of the Kingdom.

PSME WRSA JC concluded the day with a final celebratory picture-taking session and a formal early dinner, marking the successful induction of a new batch of licensed Professionals Mechanical Engineers.. The mass oath-taking and subsequent licensure processing was hailed as a successful undertaking that strengthens the Filipino professional community in the Kingdom of Saudi Arabia.

by:

Julius M. Cañeca, PME, RMP

2025 Mid-year Convention & GMM Chairman

VP Internal Affairs



Engr. Meriales participated in the oath-taking ceremony conducted by the Professional Regulatory Commission Board of Mechanical Engineering (PRBME) on June 8, 2025. This significant event was held on the second day of the PSME MERC (Philippine Society of Mechanical Engineers Middle East Regional Conference).

Additionally, we would like to acknowledge that Past President Engr. Lee I. Bonifacio also took his oath as a Professional Mechanical Engineer on September 21, 2025, during the mass face-to-face oath-taking ceremony held at the SMX Convention Center, Pasay City.

- AP of PSME Wrsa JC

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Induction of Officers of PSME WRSA Toastmasters Club 6899 - 2002 with President Ricardo V. Romero, PME

Diesel Engine Maintenance Technical Seminar by Edilberto N. Cabodil, PME at Tropicana Restaurant - 2007

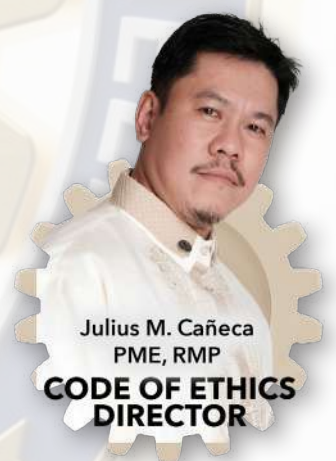
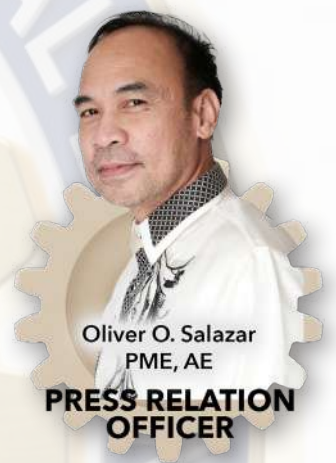
2025 PME Aspirants in Qatar



2nd Overseas Filipino Mechanical Engineers Summit



2026 Board Of Trustees



Preparation for 22nd Annual Convention & GMM



Following the monthly Board of Directors (BOD) meeting, the team executed several critical tasks to ensure the success of the 22nd Annual Convention:



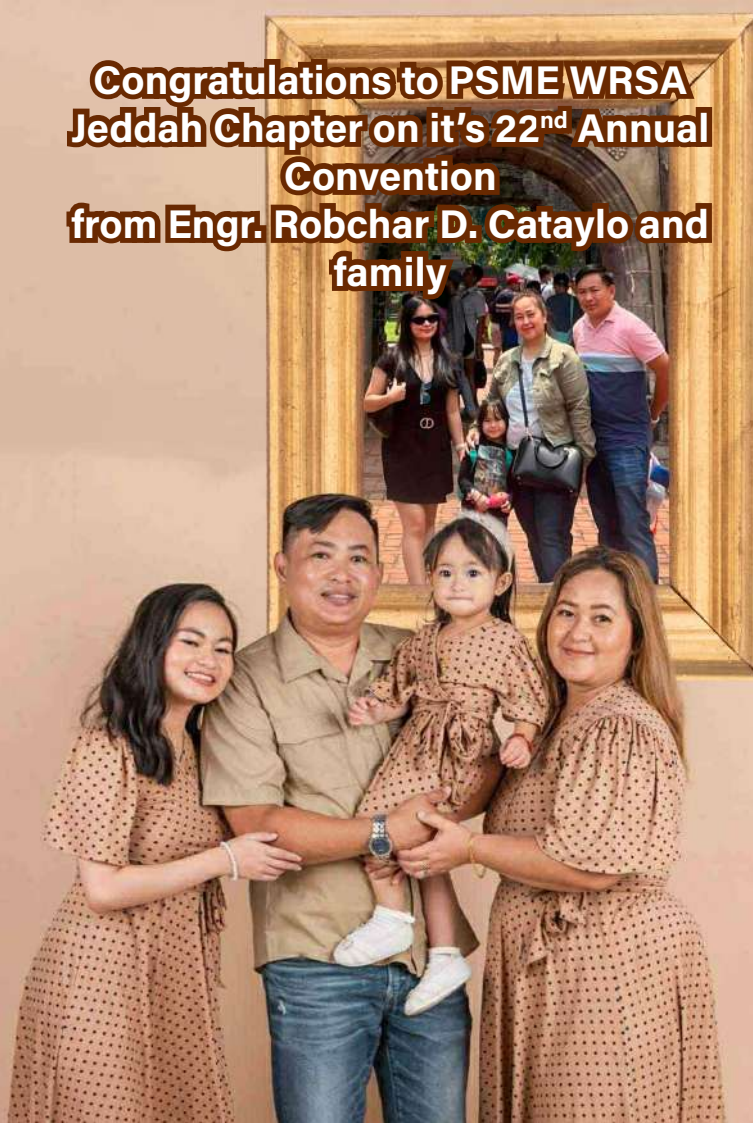
- **Publication Finalization:** We conducted thorough proofreading and final preparation of all promotional and commemorative materials, including the official souvenir programs and event flyers.
- **Content Assurance:** We meticulously verified and confirmed that all content for the souvenir program was complete and accurately placed.
- **Logistics & Attire:** The team collected the mandated Barong attires for the event.
- **Vendor & Item Follow-up:** We followed up on all outstanding logistical items and materials required for the convention.
- **Venue Confirmation:** The event hotel reservation was confirmed and secured.
- **Certificate Preparation:** Award certificates were prepared for all awardees, speakers, sponsors, and esteemed guests.



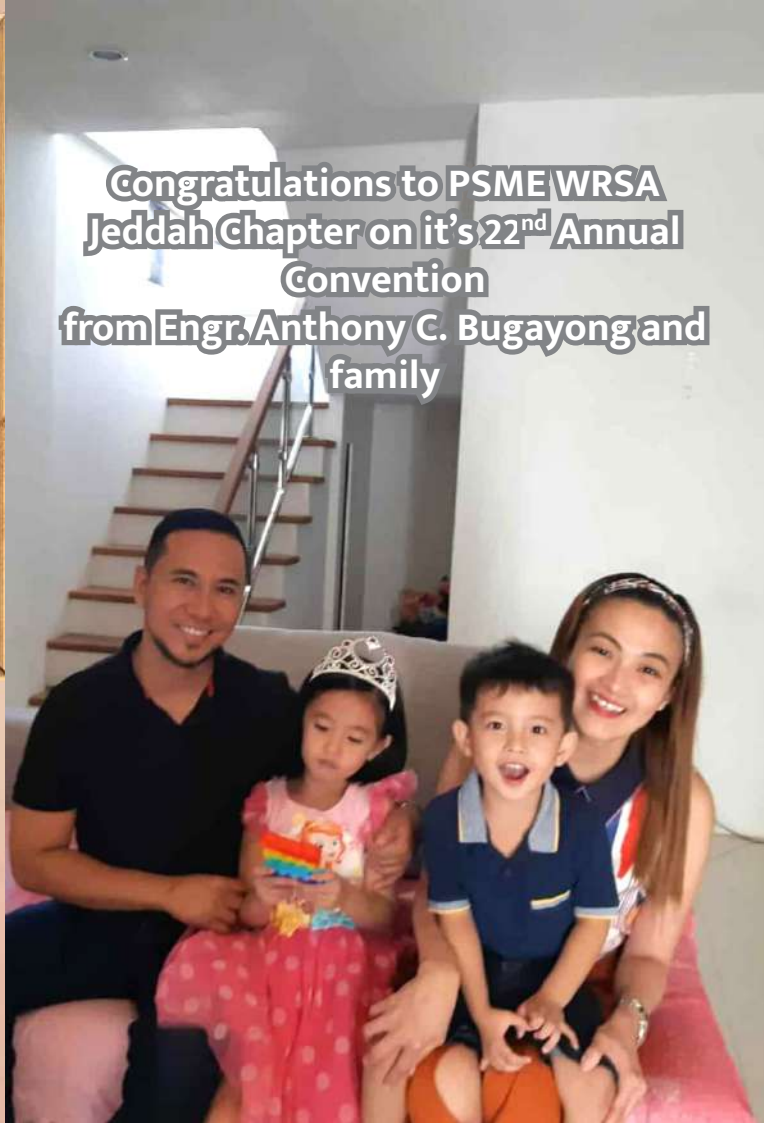
Despite the late hour and accumulated fatigue, the team successfully completed all scheduled activities, ensuring a smooth and exciting forthcoming 22nd Annual Convention.

- AP of PSME WRSA JC

**Congratulations to PSME WRSA
Jeddah Chapter on it's 22nd Annual
Convention
from Engr. Robchar D. Cataylo and
family**



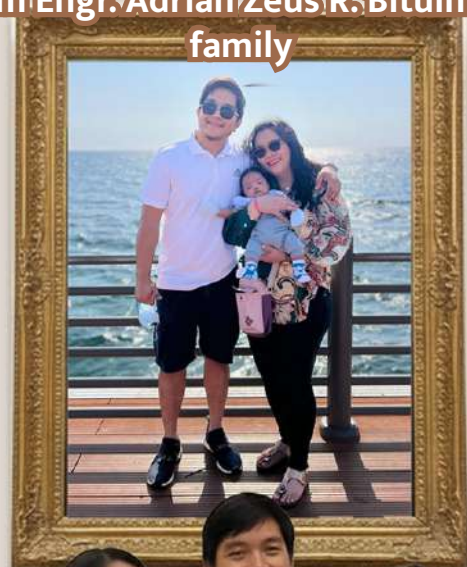
**Congratulations to PSME WRSA
Jeddah Chapter on it's 22nd Annual
Convention
from Engr. Anthony C. Bugayong and
family**



**Congratulations PSME-WRSA
Jeddah Chapter on its 22nd
Annual Convention**



**Congratulations to PSME WRSA Jeddah
Chapter on it's 22nd Annual Convention
from Engr. Adrian Zeus R. Bituin and
family**



**Napoleon M. Cepriaso, PME, AE
Munich, Germany**

**2012 PSME-WRSA JC Chapter President
2016 Fellow Awardee
2011 TOME Awardee - Construction
2002 TOME Awardee - Environmental Engineering**





! Congratulations !

to PSME (PHILIPPINE SOCIETY
OF MECHANICAL ENGINEERS)
WRSA JC (WESTERN REGION
SAUDI ARABIA)



for the 22nd Annual Convention.
Engr. Julius M. Cañeca - Reyes Fam



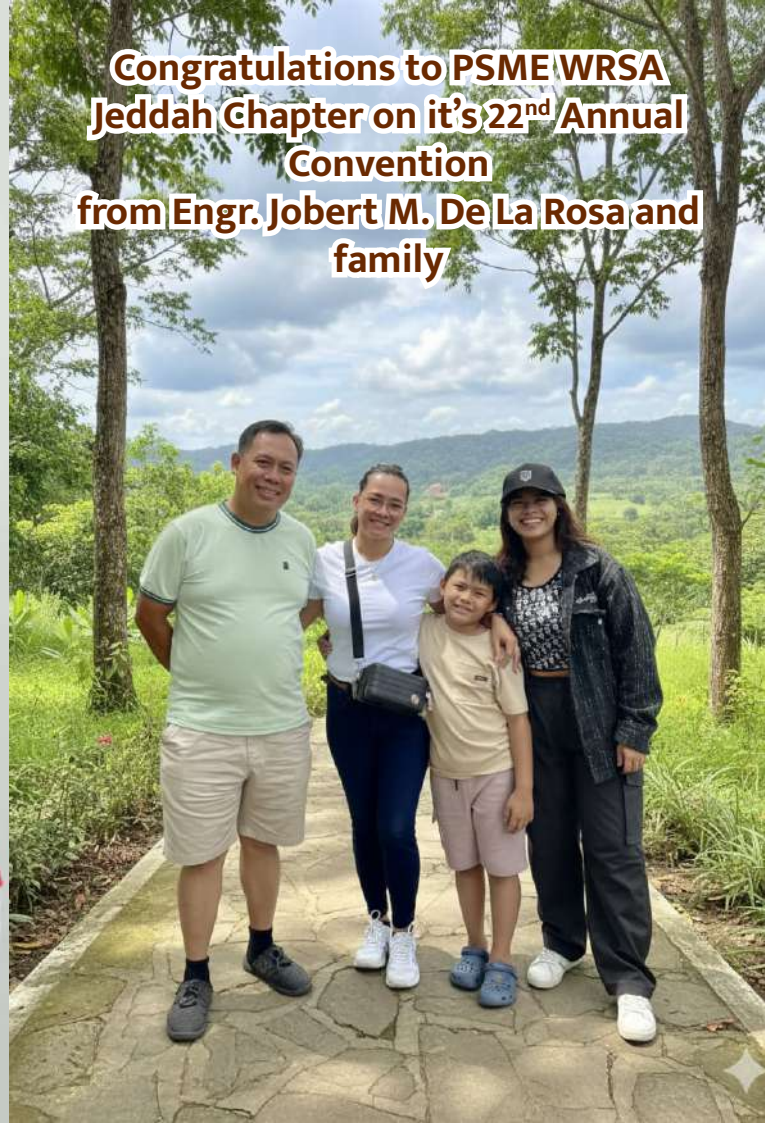
*Honoring PSME-WRSA Jeddah
Chapter on its 22nd Annual
Convention and General Membership
Meeting. Warmest Regards and
Congratulations.*

From Engr. Aldrin Alizon & Maricris

**Congratulations to PSME WRSA
Jeddah Chapter on it's 22nd Annual
Convention
from Engr. Joel N. Cadiang and family**



**Congratulations to PSME WRSA
Jeddah Chapter on it's 22nd Annual
Convention
from Engr. Jobert M. De La Rosa and
family**





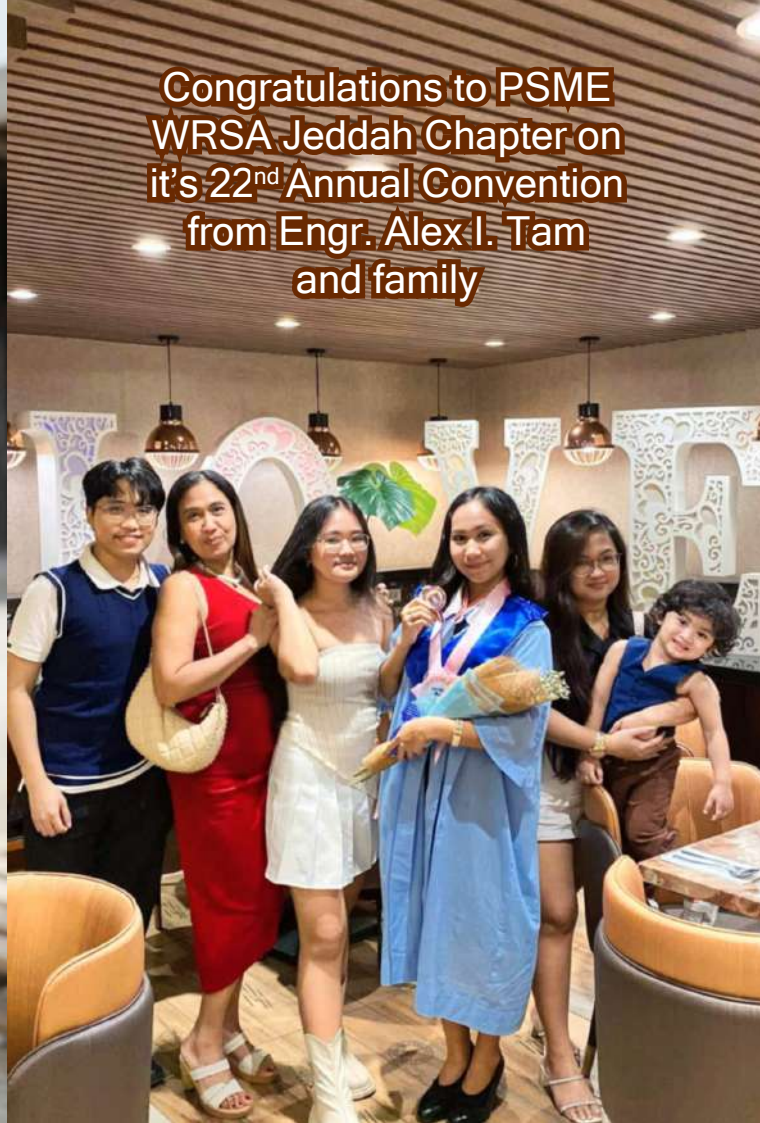
Proprietor: Orlan C. Moriones
PME, AE, RMP, SO2



Congratulations to PSME WRSA
Jeddah Chapter on it's 22nd Annual
Convention
from Engr. Orlan C. Moriones, family,
and ISAIAH Engineering Services



Congratulations to PSME WRSA
Jeddah Chapter on it's 22nd Annual
Convention
from Engr. Greg A. Gulmatico and
family



Congratulations to PSME
WRSA Jeddah Chapter on
it's 22nd Annual Convention
from Engr. Alex I. Tam
and family



Congratulations to PSME WRSA
Jeddah Chapter on it's 22nd Annual
Convention
from Engr. Lee I. Bonifacio and family

CONGRATULATIONS!!! PSME-WRSA Jeddah Chapter



From:

Engr. Jomel Santos & Family

Congratulations to PSME WRSA
Jeddah Chapter on it's 22nd Annual
Convention
from Engr. John Ray O. Madla and
family



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Research

Research, consult and provide the most relevant technical information and support in conjunction with supply of our products.



Assist

Assist our customers to select the most optimal products relevant to their needs.



Quick

Quick and accurate customer service response to meet customer's daily or urgent requirement.

OUR PRODUCTS



**We supply high quality industrial
spare parts, tools and materials
used for industries.**