



November 2021 Newsletter
Virtual Meeting November 4th at 12 pm

featuring
Salvatore Monte
Kenrich Petrochemicals Inc.

**1.5-Nanometer Heteroatom Titanates and
Zirconates – Different Than Silanes**



SAMPE NJ Chapter



@NJSAMPE

Web: <http://njsampe.org>

Meeting Details and Abstract

Virtual meeting log-in details will follow in an email announcement the week of the meeting.



Presentation Abstract:

The interfacial coupling mechanism of a 1.5-nanometer neoalkoxy titanate or zirconate via *in situ* surface proton (H⁺) coordination enables nano-surface modification and functionalization of non-silane reactive carbon and inorganic interfaces as explained through SIX FUNCTIONS: (1) Coupling; (2) Catalysis; (3) Heteroatom Phosphatization; (4) Thermoplastic Polarity; (5) Thermoset Reactivity; (6) Hybridization for water solubility. Proton reactivity enables coupling to inorganic and organic interfaces such as graphene, boron nitride, carbonates, nitramines, sulfates, and ordinary Portland cement. Unlike silane (OH⁻) Hydrolysis pretreatment condensation mechanisms leaving water on the interface detrimental to long term aging, titanate or zirconate coupling can be done *in situ*. Work with polymer blends and Recycle of Polymers #1 to 7 show mechanical recycling using *in situ* Titanium/Aluminum Catalysis provides a technical solution. U.S. ARMY US PATENT 5,472,531 entitled, "Insensitive Explosive Composition" will show any composition can be made nano-Ti-Phosphorus intumescent.

Salvatore J. Monte, President of Kenrich Petrochemicals, Inc.; B.C.E.-Structures, Manhattan College; M.S.-Polymeric Materials, NYU Tandon School of Engineering; Member Plastics Hall of Fame 2021-22; SPE Fellow & HSM; Licensed P.E.; PIA Recycle Subcommittee-Compatibilizers; BOG, Plastics Pioneers Association; 32-U.S. Patents; Lectured Worldwide on Titanate & Zirconate Coupling agents; 450-American Chemical Society CAS Abstracts of published "Works by S.J. Monte"; Classified Top Secret DOD; Lifetime member – NDA and the BOD-SPE TPM&F Division; External Advisory Committee-UCF NanoScience Technology Center; former Chairman of the NYRG-ACS Rubber Division; former President of the SPE P-NJ Section; Testified several times before Congress on Trade and IP Protection; Business Man of the Year 2015-Bayonne Chamber of Commerce; Member PIA, ACMA, SPE, ACS, ACS Rubber Division, ASCE, AIChE, SAMPE, the GRAPHENE COUNCIL, the Vinyl Sustainability Council.

OUR SCHEDULE THIS YEAR



November 4th, 12pm (Virtual)

Salvatore Monte - Kenrich Petrochemicals

December 9th, 12pm (Virtual)

To be Announced

January 2022 – No Meeting

Happy New Year!

February 2022 – Location and Format To be Announced

Speaker To be Announced

March 2022 – Location and Format To be Announced

Speaker To be Announced

Announcements



Check out SAMPE's new virtual networking site, SAMPE 365!

This is year-round platform connects innovators of the advanced materials and composites community from the private sector, government, and academia.

Anyone can create an account, but certain premium content will only be accessible to SAMPE members.



[Click here for more information](#)

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SAMPE Chapter Service Excellence Award Winner:

2002, 2003, 2004, 2005, 2006 (award retired after 2006)

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ISTC – 1981 (Mt. Pocono), 1989 (Atlantic City), 2006 (Dallas), 2009 (Wichita), 2012 (Charleston)

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