CURRICULUM VITAE

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Summary of Work Experience:

In 2015, Dr. Per Just Andersen started his own company: "PJA Holdings, LLC", based out of Dallas, USA, and started filing patents for a number of technologies that are being offered to the cement and concrete industry.

Following January 1, 2013, Dr. Per Just Andersen has worked as a consultant to a variety of industries primarily in the cement and concrete industry.

In recent years 2008-2012, while working with iCrete, Dr. Andersen has been designing concrete all over the world and has invented and implemented new methods for designing and optimizing concrete mixture designs as well as real time PC assisted quality control methods. On of the most prestigious projects was the Freedom Tower in New York, where Dr. Andersen designed most of the formulations with compressive strengths ranging from 6000-18000 PSI. The formulations involved casting 6 meter thick retaining walls while not exceeding a peak temperature of 65°C.

In former years, Dr. Andersen has worked on larger research and development projects such as: The French/British tunnel, The Great Belt Link Connection (Denmark), and SHRP C201 and SHRP C206 (Strategic Highway Research Program, USA).

Prior to January 1, 2013, Dr. Per Just Andersen has served as Senior Vice President of Product Engineering for E. Khashoggi Industries (EKI), and as Chief Science Officer at EarthShell Corporation and StarStone Corporation, and had led the company's technical development since 1992.

During those years at EKI, numerous world-class scientists and engineers had been recruited and technologies developed under Dr. Andersen's supervision. Extensive use of these key personnel in specifically directed groups have allowed the company to excel to the point that production and sales licenses are in place.

His primary area of focus had been particle optimization and related rheology of inorganic materials systems. Improvements in concrete technology have had significant impact on the design and approach to concrete production.

Work at EKI had resulted in the grant of more than 83 U.S. patents, and more than 300 related foreign patents. Effective use of key company resources led to the development of new materials and processing technologies relating to a variety of technologies in the clay, silica, concrete, and biopolymer and paper industries. The result of Dr. Andersen's inventions led to the formation of four new companies: Earthshell, Docrete, StarStone and iCrete.

Dr. Andersen's experience covers 33 years in a variety of industries developing new materials and processes. Assignments included positions as Group Leader, Project Manager, Department Manager and Senior Consultant interfacing with a unique blend of personalities and skill sets. His industrial experience began while a chemical engineering student at the Danish Technical University. During this time process, development work was proceeding and resolutions of related problems at Royal Copenhagen Porcelain

were accomplished. Dr Andersen's thesis work specialized in the cement industry where he was honored to be included among the top students in his graduation class.

Prior to Dr. Andersen's involvement at EKI, he had the opportunity to work for a short period at the Danish Technological Institute where he worked with the top Danish concrete technologists, and following he had the opportunity to finish his 2nd Master's of Science in Materials Science at the Materials Research Laboratory (MRL), The Pennsylvania State University. His research at MRL was sponsored by W.R. Grace and during his studies he received the opportunity to work with some of the most prominent US researchers of the era such as D.M. Roy, F. Young, S. Diamond and J. Skalny. Dr. Andersen's thesis work specialized in the development of High Range Water Reducers (the most advanced type of concrete water reducer that is on the market today).

After completing his US degree, Dr. Andersen returned to Denmark where he had the opportunity to work for G. M. Idorn Inc. (Gunnar M. Idorn was one of 22 honorary members of ACI; GMI: a Danish subsidiary company of Ramboell, Denmark. One of the biggest consulting companies in Europe with more than 8000 employees worldwide), an internationally recognized consulting and research company in the field of cement and concrete. This was particularly beneficial in that Dr. Andersen simultaneously did his Ph.D. studies at the Danish Technical University, and performed research jointly between the company and the university. As a world-class technical practitioner, Dr. Andersen participated in research and development worldwide principally in the industry of cement and concrete, as well as the application of the technologies therein.

Education:

Ph.D. The Danish Academy of Technical Sciences,

Institute of Mineral Industry,

The Technical University of Denmark, 1990

M.Sc. Solid State Science, Materials Research Laboratory

The Pennsylvania State University, 1987

M.Sc. Chemical Engineering

The Engineering Academy of Denmark, The Technical University of Denmark, 1985

Professional Experience:

2013 - present Consultant

2004 - 2012 Starstone

2008 - 2012 iCrete

2004 – 2012 E. Khashoggi Industries

Santa Barbara, CA

Senior Vice President of Product Engineering

Responsible for: Original research, materials research, application research and development activities, as well as management and group leadership of materials scientists involved in the development of proprietary technology related to novel cement

compositions and products, and their methods of manufacture as used in a multitude of industries.

2001 – 2004 EarthShell Corporation

Santa Barbara, CA, USA

Chief Science Officer and Senior Vice President of Product Engineering

Responsible for: Product and process development, including original research, materials research, application research and development activities, as well as management and group leadership of materials scientists involved in the development of proprietary technology related to novel starch compositions and products, and their methods of manufacture. The development led to one of the biggest IPOs in American history with a market introduction price of 2.1 billion USD.

1992 - 2001 E. Khashoggi Industries (and EarthShell Corporation)

Santa Barbara, CA

Senior Vice President of Product Engineering

Responsible for: Original research, materials research, application research and development activities, as well as management and group leadership of materials scientists involved in the development of proprietary technology related to novel cement and starch compositions and products, and their methods of manufacture as used in a multitude of industries. The end products of these research activities will ultimately contribute solutions to environmental problems.

1987-1992 G. M. Idorn Consult A/S.,

Ramboell A/S, Copenhagen, Denmark

Manager of Materials Optimization and Instrumentation

Industrial Researcher and Project Manager

Responsibilities included: Chemical aspects of cement and concrete in the fresh and hardened state, rheological effects of additives and admixtures, design of properties of cement based materials in relation to industrial processing techniques. Materials optimization and development of specialized test instrumentation.

1987-1990 Institute of Mineral Industry,

The Technical University of Denmark,

Ph.D. study in cooperation with G.M. Idorn Consult A/S

Projects included: Company-University interrelated research.

Supervisors: Torben Knudsen, Vagn Johansen, Lars Hjorth and Per Freisleben Hansen. Conducted studies of control and monitoring of cement and concrete production with special emphasis on studies of particle packing and rheology.

1985-1987 Materials Research Laboratory

The Pennsylvania State University, PA, USA

Graduate Student

Projects included: Graduate work for W.R. Grace & Co., Columbia, MD.

Supervisors: D. M. Roy and J. P. Skalny. Conducted studies of the mechanisms of water-soluble polymeric species on Portland cements and their components.

1985 - Danish Technological Institute

Project Engineer

Work assignments included: Research in new cement based materials including the use of chemical admixtures in concrete, design of mortars and development of new processing methods for fiber-reinforced concrete.

1983 - Royal Copenhagen Porcelain

Project Engineer

Research in new ceramic processing technology

Awards and Conferences:

Innovation in Real Materials Award, Materials Research Laboratory, The Pennsylvania State University, based on "Inorganic-Organic Composite Foam Materials for Food Packaging", research presented at the Innovations in Materials Conference, Washington DC, July 1998.

Presentations at the American Ceramic Society, Chicago 1986, Pittsburgh 1987 and Cincinnati 1988.

Participation in meetings arranged 1987-88 by Consortium of Chemically Bonded Ceramics, Materials Research Laboratory, The Pennsylvania State University.

Presentations at F. L. Smidth Seminar, Copenhagen, 1990 and 1991.

Presentation at Danish Concrete Association, Copenhagen, 1990.

Presentations at Nordic Concrete Conference, Trondheim, Norway, 1990.

Presentation at Danish Concrete Association, Copenhagen, 1991.

Presentation at ACI Spring Meeting, Boston, MA, 1991.

Presentations at Engineering Foundation Meeting, Potosi, Missouri, 1991.

More than 40 presentations at companies and seminars in Europe and U.S.A.

Grants

A total of \$30,000 was awarded from six Danish companies and foundations sponsoring M.Sc. studies at The Pennsylvania State University.

A total of \$60,000 was awarded from the Danish Academy of Technical Sciences sponsoring Ph.D. studies at the Technical University of Copenhagen in cooperation with G.M. Idorn Consult A/S.

Full graduate research scholarship while attending The Pennsylvania State University was sponsored by W.R. Grace.

Selected Patents (US)

Detect No.	Tille.
Patent No.:	Title:
6,379,446	Methods for dispersing fibers within aqueous compositions
6,347,934	System for metering and delivering a moldable composition into a mold
6,231,970	Thermoplastic starch compositions incorporating a particulate filler component
6,200,404	Compositions and methods for manufacturing starch-based sheets
6,180,037	Methods for the manufacture of sheets having a highly inorganically filled organic polymer
0.400.057	matrix
6,168,857	Compositions and methods for manufacturing starch-based compositions
6,155,161	Food processing apparatus
6,146,573	Method for producing disposable thin-walled molded articles
6,090,195	Compositions used in manufacturing articles having an inorganically filled organic polymer matrix
6,083,586	Sheets having a starch-based binding matrix
6,030,673	Molded starch-bound containers and other articles having natural and/or synthetic polymer coatings
5,976,235	Compositions for manufacturing sheets having a high starch content
5,928,741	Laminated articles of manufacture fashioned from sheets having a highly inorganically
, ,	filled organic polymer matrix
5,879,722	System for manufacturing sheets from hydraulically settable compositions
5,868,824	Inorganically filled, starch-based compositions for manufacturing containers and other
	articles having a thermodynamically controlled cellular matrix
5,851,634	Hinges for highly inorganically filled composite materials
5,849,155	Method for dispersing cellulose based fibers in water
5,843,544	Articles which include a hinged starch-bound cellular matrix
5,830,548	Articles of manufacture and methods for manufacturing laminate structures including inorganically filled sheets
5,830,305	Methods of molding articles having an inorganically filled organic polymer matrix
5,819,636	Multi-functional programmable food processor
5,810,961	Methods for manufacturing molded sheets having a high starch content
5,800,756	Methods for manufacturing containers and other articles from hydraulically settable
	mixtures
5,800,647	Methods for manufacturing articles from sheets having a highly inorganically filled organic polymer matrix
5,798,151	Hydraulically settable articles which include helically wound filaments
5,786,080	Compositions and methods for manufacturing ettringite coated fibers and aggregates
5,783,126	Method for manufacturing articles having inorganically filled, starch-bound cellular matrix
5,776,388	Methods for molding articles which include a hinged starch-bound cellular matrix
5,766,525	Methods for manufacturing articles from sheets of unhardened hydraulically settable compositions
5,753,308	Methods for manufacturing food and beverage containers from inorganic aggregates and
5 700 004	polysaccharide, protein, or synthetic organic binders
5,738,921	Compositions and methods for manufacturing sealable, liquid-tight containers comprising
5 736 200	an inorganically filled matrix
5,736,209 5,730,013	Compositions having a high ungelatinized starch content and sheets molded there from
5,720,913 5,716,675	Methods for manufacturing sheets from hydraulically settable compositions Methods for treating the surface of starch based articles with givening
5,716,675 5,714,217	Methods for treating the surface of starch-based articles with glycerin
5,714,217	Sealable liquid-tight containers comprised of coated hydraulically settable materials

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5,545,297	Methods for continuously placing filaments within hydraulically settable compositions being extruded into articles of manufacture
5,543,186	Sealable liquid-tight, thin-walled containers made from hydraulically settable materials
5,527,387	Computer implemented processes for microstructurally engineering cementious mixtures
5,514,430	Coated hydraulically settable containers and other articles for storing, dispensing, and packaging food and beverages
5,508,072	Sheets having a highly inorganically filled organic polymer matrix
5,506,046	Articles of manufacture fashioned from sheets having a highly inorganically filled organic polymer matrix
5,505,987	Processes for improving the bond between hydrating cement-based materials and existing cement-based substrates
5,453,310	Cementitious materials for use in packaging containers and their methods of manufacture
5,385,764	Hydraulically settable containers and other articles for storing, dispensing, and packaging food and beverages and methods for their manufacture

Several Starstone related US patents pending.

More than 30 patents pending with European companies over last 3 years.

Selected Publications

- J. H. Schut, "High-Tech Biodegradability", Article in Plastics World, Vol. 54, No. 12, pp. 29-33 (December 1996).
- P. J. Andersen, A. Kumar and S. Hodson, "Inorganically Filled Starch Based Fiber Reinforced Composite Foam Materials for Food Packaging", Materials Research Innovation 3:2-8, Springer Verlag (1999)
- P. J. Andersen, "The Effect of Superplasticizers and Air-Entraining Agents on the Zeta Potential of Cement Particles", Thesis, The Engineering Academy of Denmark, Chemical Department, Lyngby, Denmark (January 1985) (In Danish).
- P. J. Andersen, "Effect of Organic Superplasticizing Admixtures and Their Components on Zeta Potential and Related Properties of Cement Materials", Thesis, Materials Research Laboratory, The Pennsylvania State University, University Park, PA, U.S.A. (1987).
- K. Eriksen and P. J. Andersen, "Foam Stability Experiments on Solutions Containing Superplasticizing and Air-Entraining Agents for Concrete", Nordic Concrete Research, No. 4, pp. 45-54 (1985).
- K. Eriksen, P. J. Andersen and A. D. Jensen, Project Report: "1. Combined Use of Air-Entraining Agents and Superplasticizing Admixtures in Concrete, 2. Foam Test, 3. Results", Technological Institute, Denmark (1985).
- P. J. Andersen, A. Kumar, D. M. Roy and D. Wolf-Confer, "The Effect of Calcium Sulphate Concentration on the Adsorption of a Superplasticizer on a Cement: Methods, Zeta Potential and Adsorption Studies", Cement and Concrete Research, Vol. 16, pp. 931-940 (1986).
- P. J. Andersen, "The Effect of Superplasticizers and Air-Entraining Agents on the Zeta Potential of Cement Particles", Cement and Concrete Research, Vol. 16, pp. 931-940 (1986).

- P. J. Andersen, D. M. Roy and J. M. Gaidis, "The Effects of Adsorption of Superplasticizers on the Surface of Cement", Cement and Concrete Research, Vol. 17, pp. 805-813 (1987).
- V. Johansen, P. J. Andersen and N. Thaulow, "Control and Surveillance of Concrete Production", TR-Project No. 1986-860780.0, (1987) (In Danish).
- F. Strabo, N. F. Clauson-Kaas, P. J. Andersen and N. Thaulow, "Extrusion of Fibre-Reinforced Concrete", TR-Project 1985-133/177-85.538 (1987) (In Danish and English).
- P. J. Andersen and D. M. Roy, "The Effect of Superplasticizer Molecular Weight on Its Adsorption On, and Dispersion of Cement", Cement and Concrete Research, Vol. 18, pp. 980-986 (1988).
- P. J. Andersen and V. Johansen, "Computer-Aided Simulation of Particle Packing. A Tool for Proportioning Cement Based Materials", Dansk Beton, 4, pp. 24-31, (1989) (In Danish).
- J. Holm and P. J. Andersen, "AASHTO T 277-831, a Standard Test Method for Quick Measurement of Concrete Permeability", Dansk Beton, 3, pp. 35-41 (1989).
- P. J. Andersen, "Control and Monitoring of Concrete Production. A Study of Particle Packing and Rheology", Ph.D. Thesis, The Danish Academy of Technical Sciences, The Technical University of Denmark (1990).
- V. Johansen and P. J. Andersen, "Particle Packing and Concrete Properties", Materials Science of Concrete, Vol. 2, Ed. J. P. Skalny, The American Ceramic Society (1990).
- S. Johansson and P. J. Andersen, "Pozzolanic Activity of Calcined Moler Clay", Cement and Concrete Research (1990).
- M. Geiker, N. Thaulow and P. J. Andersen, "Assessment of Rapid Chloride Permeability Test of Concrete With and Without Mineral Admixtures", Fifth International Conference on Durability of Building Materials and Components, England (1990).
- P. J. Andersen, "Rheology of Cement Paste, Mortar and Concrete", Seminar on Rheology of Fresh Concrete, Norway (1990).
- P. J. Andersen, "Packing and Rheological Models to Describe the Properties of Fresh and Hardened Concrete".
- P. J. Andersen, V. Johansen and C. Zukoski, "Rheology of Concrete", invited publication in Materials Science of Concrete, Vol. 4, Ed. J. P. Skalny, The American Ceramic Society.
- P. J. Andersen, V. Johansen, D. M. Roy, B. E. Scheetz, S. Sabol, P. W. Brown, D. Shi, P. H. Licastro, "Maturity Model and Curing Technology", Strategic Highway Research Program, National Research Council, Washington, DC, (1993).
- P. J. Andersen, V. Johansen, "A Guide to Determining the Optimal Gradation of Concrete Aggregates", Strategic Highway Research Program, National Research Council, Washington, DC, (1993).

P. J. Andersen, V. Johansen, D. M. Roy, B. E. Scheetz, R. I. A. Malek, D. Shi, "Concrete Components Packing Handbook", Strategic Highway Research Program, National Research Council, Washington, DC, (1993).

Selected Industrial Reports

- P. J. Andersen, "Investigation of the Particle Size Distribution of Molér Dust and Molér Aggregate. Investigations of the Crack Appearance in Molér Bricks and Calcium-Silicate Profiles", company report, D. K., April 1987, GMIC No. 870101 (In Danish).
- P. J. Andersen and V. Johansen, "Differential Thermal Analysis of Calcium-Silicate Profiles. Investigations Into the Origin of Yellow Color Appearing in Silica Suspension", company report, D. K., September 1987, GMIC No. 870608 (In Danish).
- V. Johansen and P. J. Andersen, "Investigations of the Packing Density of Neocryl B734. Design of Cement for Human Bone.", company report, D.K., January 1988, GMIC No. 880102 (In Danish).
- V. Johansen and P. J. Andersen, "Differential Thermal Analyses of Three Calcium-Silicate Profiles", Report No. 1, company report, D.K., March 1988, GMIC No. 880106 (In Danish).
- V. Johansen and P. J. Andersen, "Analyses of Water Samples from Tank 11 and Tank 12", Report No. 2, company report, D.K., May 1988, GMIC No. 880106 (In Danish).
- M. Fich, P. J. Andersen and J. Holm, "Investigation of the Influence of XXXXXX Polypropylene Fibers on the Microstructure and Permeability of Portland Cement Concrete", Progress Report No. 2, company report, U.S.A., June 1988, GMIC No. 870306.
- V. Johansen and P. J. Andersen, "Long-Term Durability of Cellulose Fibres in Calcium-Silicate Profiles, Literature Study", company report, D.K., June 1988, GMIC No. 880106 (In Danish).
- P. J. Andersen and V. Johansen, "Spectro-Photometric Analyses of Organic Admixtures in Cement Suspensions of Recycled Concrete", company report, D.K., June 1988, GMIC No. 880207 (In Danish).
- V. Johansen, P. J. Andersen and N. Thaulow, "Analyses of Microstructure Homogeneity", Report to Strategic Highway Research Program, SHRP C-201, U.S. A., June 1988, GMIC No. 880203.
- V. Johansen and P. J. Andersen, "Packing Density", Report to Strategic Highway Research Program, SHRP C-201, U.S.A., August 1988, GMIC No. 880203.
- P. J. Andersen, "Effects of w/c-Ratio and Dispersion on the Pore Size Distribution of Cement Paste and Concrete", Report to Strategic Highway Research Program, SHRP C-201, U.S.A., August 1988, GMIC No. 880206.
- V. Johansen and P. J. Andersen, "Rheology of Cement Pastes, Mortars and Concretes", Report to Strategic Highway Research Program, SHRP C-201, U.S.A., August 1988, GMIC No. 880203.
- V. Johansen and P. J. Andersen, "Analyses of Cement", Report to Strategic Highway Research Program, SHRP C-201, U.S.A., September 1988, GMIC No. 880203.

- P. J. Andersen and J. Holm, "Effects of XXXXXX Polypropylene Fibers on the Workability of Fresh Concrete", company report, U.S.A., October 1988, GMIC No. 870306.
- P. J. Andersen, "Proportioning of Concrete by the Use of Packing and Rheological Models", Report to Strategic Highway Research Program, SHRP C-201, U.S. A., November 1988, GMIC No. 880203.
- P. J. Andersen, "Optimization of Concrete for Concrete Pipes", company report, Sweden, October 1989, GMIC No. 891004 (In Danish).
- P. J. Andersen and V. Johansen, "Hydrostatic and Hydraulic Investigations of Calcium-Silicate Building Profiles", company report, D.K., December 1989, GMIC No. 891006 and 891007 (In Danish).
- P. J. Andersen and C. Pade, "Qualitative and Quantitative Analyses of Organic Admixtures in Hardened Concrete", internal GMIC report, D.K. January 1990, GMIC No. 890906 (In Danish).
- P. J. Andersen and J. Alsing, "Rapid Chloride Permeability Test Manual", Manual delivered with developed RCPT test equipment, D.K., June 1989, GMIC No. 890205.
- P. J. Andersen, "Autoclaved Cement Based Products, Possibilities and Perspectives", company report, D.K., September 1989, GMIC No. 890907 (In Danish).
- P. J. Andersen and N. Thaulow, "Performance Tailored High Quality Concrete", company report, Sweden, March 1990, GMIC No. 891204.
- M. Geiger and P. J. Andersen, "Rapid Chloride Permeability Tests of Concrete Added Surface Sealer", company report, March 1990, GMIC No. 890807 (In Danish).
- P. J. Andersen and J. Holm, "Optimization of Spanmax Concrete for Extruded Deck Elements", company report, D.K., March 1990, GMIC No. 900102 (In Danish).
- P. J. Andersen, "Physical and Chemical Investigations of Three Samples of Elkem Silica", company report, D.K., May 1990, GMIC No. 900408 (In Danish).
- P. J. Andersen, "Packing Optimization of Self Smoothing Mortar for Floors", company report, Sweden, June 1990, GMIC No. 900407 (In Danish).
- P. J. Andersen, "How to Use the Packing Handbook", Report to Strategic Highway Research Program, U.S.A., June 1990, GMIC No. 880203.
- P. J. Andersen and J. Holm, "Study of the Mix Design of Concrete for the West Bridge of the Great Belt Link", Report 1-2, company reports, D.K., August, September 1990.
- P. J. Andersen and J. Holm, "Analysis and Optimization of Mortar Coating Process", company report, U.S.A., May 1991, GMIC No. 891202.
- P. J. Andersen and U. H. Jacobsen, "Petrographic Analysis of Pre-Stressed Concrete Pipe Mortar", Reports 1-8, company reports, U.S.A., May 1991, GMIC No. 910409.
- P. J. Andersen and U. H. Jacobsen, "Analysis of Pre-stressed Concrete Pipe Mortar", company report, U.S. A., May 1991, GMIC No. 910409.

- P. J. Andersen, U. H. Jacobsen and J. Holm, "Studies of the Current Mix Design of Concrete for Pont de Normandie", Reports 1-5, France, company reports, May 1991, GMIC No. 910307.
- P. J. Andersen, U. H. Jacobsen and J. Holm, "Investigation into the Cause of Corrosion of Pre-stressed Enlarging in Mortar Coating Samples", company report, U.S.A., May 1991, GMIC No. 901202.
- P. J. Andersen and P. Goltermann, "Materials Design of Precast Light Weight Concrete Wall Elements", company report, D.K., June 1991, GMIC No. 910101.
- P. J. Andersen, "Summary of Observations Made During Visits to XXX". company report, U.S.A., September 1991, GMIC No. 891206.
- P. J. Andersen and U. H. Jacobsen, "Petrographic and Chemical Analysis of Thirteen Mortar Coatings From a Pressure Pipeline in XXXX, XXX", company report, U.S.A., September 1991, GMIC No. 910803.
- P. J. Andersen and J. Holm, "Further Analyses of XXX's Mortar Coating Process at the XXX Plant", company report, U.S.A., October 1991, GMIC No. 910704.
- P. J. Andersen and J. Raben-Levetzau, "Petrographic and Chemical Analysis of Six Mortar Coating Samples", company report, U.S.A., October 1991, GMIC No. 910704.
- P. J. Andersen and J. Raben-Levetzau, "Petrographic Examination of Three Thin-Bonded Overlay Concrete Samples", company report, U.S.A., October 1991, GMIC No. 911002.
- P. J. Andersen and M. E. Andersen, "A Guide to Evaluate Thermal Effects in Concrete Pavements", Report to Strategic Highway Research Program, SHRP C-206, U.S.A., October 1991, GMIC No. 901001.
- P. J. Andersen V. Johansen, "Packing Handbook, a Guide to Determine the Optimal Gradation of Concrete Aggregates", Report to Strategic Highway Research Program, SHRP C-206, U.S.A., November 1991, GMIC No. 901001.