

Exponent®
Engineering & Scientific Consulting

Jericho Moll, Ph.D., CPP
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Professional Profile

Dr. Moll consults on a wide variety of proactive and reactive projects involving the bulk physical properties of polymers specified for use in the construction and building materials, medical, automotive, packaging, fluid handling, electrical, and consumer products industries.

For example, Dr. Moll routinely examines and investigates polymeric pipe, tubing, and fitting failures including components made from polyethylene, cross-linked polyethylene, polyvinyl chloride (PVC), and chlorinated polyvinyl chloride (CPVC). Her work often involves investigating the root causes of polymer and plastic failure using her knowledge of structure-property relationships, chemical compatibility, and considering the product end-use environment. In addition to thermoplastic polymers, Dr. Moll also investigates failures in thermosetting materials such as epoxies and acrylics, which are often used as adhesives and in composites. Her areas of expertise and research interests include failure analysis, fractography, materials selection, and mechanical testing of polymers and composite materials.

Dr. Moll has considerable experience with a variety of material characterization techniques such as thermal gravimetric analysis (TGA), differential scanning calorimetry (DSC), infrared spectroscopy (IR), scanning electron microscopy (SEM), and energy-dispersive X-ray spectroscopy (EDX). Dr. Moll is familiar with several standard composite manufacturing processes such as vacuum assisted resin infusion molding, compression molding, wet layup, prepreg layup, autoclave curing, and vacuum bagging. She is also well versed in standardized and customized mechanical test methods often employed for polymers and composite materials.

Before joining Exponent, Dr. Moll was a postdoctoral research scientist at the Swiss Federal Institute of Technology in Lausanne, Switzerland (École Polytechnique Fédérale de Lausanne), working with two industrial partners on the development of thin and flexible batteries. Her research activities focused on the development and testing of multifunctional water and oxygen barrier films for flexible battery encapsulation. In addition, Dr. Moll's doctoral research concentrated on the development, integration, and manufacturing of a microencapsulated thermally stable healing chemistry enabling the self-healing of cracks that develop in high-demand composite applications including pressure vessels.

Academic Credentials & Professional Honors

Ph.D., Materials Science and Engineering, University of Illinois, Urbana-Champaign, 2011

M.S., Materials Science and Engineering, University of Illinois, Urbana-Champaign, 2008

B.A., Chemistry, Hope College, 2005

B.S., Chemical Engineering, Hope College, 2005

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Licenses and Certifications

Certified Packaging Professional (CPP)

Academic Appointments

Worcester Polytechnic Institute Department of Mechanical & Materials Engineering, Adjunct Professor, 2025

Prior Experience

Postdoctoral Research Scientist, Swiss Federal Institute of Technology in Lausanne (EPFL), 2011-2013

Research Assistant, University of Illinois at Urbana-Champaign, 2006-2011

Undergraduate Research Assistant, Hope College, 2002-2005

Professional Affiliations

Society of Plastic Engineers (SPE)

ASM International

Institute of Packaging Professionals (IoPP)

Patents

US20150380764A1: Electrochemical Cell, December 2015 (P. Heck, M. Stalder, F. Zuellig, K. Sohi, Y. Leterrier, J. Moll, J.-B. Leran, J.-A. Manson).

US8703285B2: Interfacial Functionalization for Self-healing Composites, April 2014 (B.J. Blaiszik, J.L. Moll, B.A. Beiermann, S.R. White, and N.R. Sottos).

Publications

Gupta C, Moll J, Bennett-Kennett R, Santos S, (in press). A case study on unique challenges related to cured-in-place pipe repair methods. Proceedings, AMPP. Houston, TX, 2026.

Moll J, Lee C. Fractography of Polymers. ASM Handbook, Volume 12, Fractography (2024), pp. 463 - 480.

Dimitriou M, Moll J, Reitman M. Polymer Materials in Architectural Applications: Building on Traditional Knowledge and Innovative Technologies in Materials Selection for Long-Term Success. Architectural Plastics & Polymer Composites in the 21st Century Conference Proceedings Plus (Vol I). The Technology Organization, Inc. Somerville, MA, 2021.

White C, Dimitriou M, Moll J, Reitman M. Traditional Polymer Materials in Innovative Architectural Applications: Understanding How Advances in Design Affects the Materials Selection Process. Architectural Plastics & Polymer Composites in the 21st Century Conference Proceedings Plus (Vol I). The Technology Organization, Inc. Somerville, MA, 2021.

Benight S, MacLean S, Garcia M, Moll, J. Microscopy of intentionally oxidized polypropylene-based mesh material. Proceedings, ANTEC, 2016.

Lee C, Moll J, Ledwith P, MacLean S. Fractographic examination and tensile property evaluation of 3D printed acrylonitrile butadiene styrene (ABS). Proceedings, ANTEC, 2015.

Moll JL, Jin H, Mangun CL, White SR, Sottos NR. Self-sealing of mechanical damage in a fully cured structural composite. Composites Science and Technology 2013; 79:15-20.

Moll JL, White SR, Sottos NR. A self-sealing fiber-reinforced composite. Journal of Composite Materials 2010; 44: 2573-2585.

Presentations

Moll J, Fitzharris E, Liffland S, Lyons C. Medical Disinfecting Agents Induced Embrittlement in a Polycarbonate-Acrylonitrile Butadiene Styrene (PC-ABS) Resin. International Materials Applications & Technologies Conference and Exposition – IMAT, Cleveland, OH, October 2024.

Lee C, Fitzharris E, Kreder M, Moll J. Effect of Stress, Material, and Exposure Route on ESC. International Materials Applications & Technologies Conference and Exposition – IMAT, Cleveland, OH, October 2024.

Fitzharris E, Kreder M, Lee C, Moll J. ESC Fractography: A Study Varying Stress in Two Amorphous Polymers. International Materials Applications & Technologies Conference and Exposition – IMAT, New Orleans, LA, September 2022.

Lyons C, Moll J, Lee C. Fractography of Amorphous Polymers – A Comparison of Tensile, Impact, and Environmental Stress Cracking Facture Surfaces. International Materials Applications & Technologies Conference and Exposition – IMAT, New Orleans, LA, September 2022.

Vytiniotis, A, Moll, JL. Buried Plastic Reservoirs and Tanks – Out of Sight; But Are They Out of Mind? American Society of Civil Engineers, Continuing education for licensed professional engineers, 2019.

Benight S, MacLean S, Garcia M, Moll, J. Microscopy of intentionally oxidized polypropylene-based mesh material. Proceedings, ANTEC, 2016.

Lee C, Moll J, Ledwith P, MacLean S. Fractographic examination and tensile property evaluation of 3D printed acrylonitrile butadiene styrene (ABS). Proceedings, ANTEC, 2015.

MacLean SB, Moll J. The importance of polymer structure-property relationships in preventing failure in medical devices. Medical Grade Polymers Conference, Woburn, MA, 2015.

Moll JL. Self-sealing of thermal fatigue and mechanical damage in fiber reinforced composites. 3rd International Conference on Self-Healing Materials, Bath, England, July 2011.

Moll JL. A high temperature cured structural self-sealing composite. Society of Engineering Science Conference, Ames IA, October 2010.

Moll JL. Self-sealing fiber reinforced composites. 2nd International Conference on Self-Healing Materials, Chicago IL, July 2009.

Moll JL. Self-sealing fiber reinforced composites. Society of Engineering Science Conference, Urbana IL, October 2008.