

Maureen T. F. Reitman, Sc.D.
Principal and Practice Director

Professional Profile

Dr. Maureen Reitman is a Principal and the Director of Exponent's Polymer Science and Material Chemistry practice. Her expertise includes polymer and composite technology, mechanics of materials, adhesion science, fiber mechanics, history and technology of plastics, and material failure analysis. She is skilled in the development and use of testing tools and methods and has applied them to plastic, rubber, textile, metal, glass, ceramic, and composite materials and systems. She is experienced in major aspects of product development, including materials selection, end-use testing, failure analysis, certification procedures and issues related to intellectual property.

Dr. Reitman has conducted research in the areas of barrier materials; plastic pipes; transdermal drug delivery; adhesives, sealants, encapsulants, and molding compounds; nanoparticles; fibers and textiles; polymer chemical resistance; plastic insulation; connectors and splices; plastic packaging; medical devices; environmental effects on durability; and product aging. She has used her expertise to solve a broad range of problems related to coatings, fibers, films, and extruded and molded products, and their use in the telecom, electronics, electrical, transportation, construction, fire protection, medical, and consumer products markets.

Dr. Reitman is a member of the Board of Directors of the Medical Plastics Division of the Society of Plastics Engineers and an active member of two Underwriters Laboratories Standard Technical Panels, addressing Polymeric Materials (UL 94, UL 746, UL 1694) and Appliance Wiring (UL758).

Prior to joining Exponent, Dr. Reitman worked for the 3M Company in both research and management roles. Her activities included technology identification, materials selection and qualification, product development, customer support, program management, acquisition integration, intellectual property analysis, and patent litigation support.

Academic Credentials and Professional Honors

Sc.D., Materials Science and Engineering/ Program in Polymer Science and Technology,
Massachusetts Institute of Technology, 1993
B.S., Materials Science and Engineering, Massachusetts Institute of Technology, 1990

National Academy of Engineering Frontiers of Engineering, 2009; Tau Beta Pi; Sigma Xi
John Wulff Award; Carl Loeb Fellowship; NCAA Postgraduate Scholarship;
Malcolm G. Kispert Award; GTE Academic All-American

Patents

Patent 6,311,524: Accelerated Method for Increasing the Photosensitivity of a Glassy Material, issued November 6, 2001.

European Patent EP0830428: Tackified Polydiorganosiloxane Polyurea Segmented Copolymers and a Process for Making Same, published March 25, 1998.

Patent 5,371,051: Fiber Optic Fusion Splice Protector Sleeve, issued March 24, 1998.

Publications

Kurtz S, Siskey R, Reitman M. Accelerated aging, natural aging, and small punch testing of gamma-air sterilized polycarbonate urethane acetabular components. *Journal of Biomedical Materials Research Part B: Applied Biomaterials* 2010 May; 93B(2):422–447.

Hoffman JM, Reitman M, Donthu S, Ledwith P. Complimentary failure analysis methods and their application to CPVC pipe. *Proceedings, ANTEC 2010, Society of Plastics Engineers, Orlando, FL, May 2010.*

Hoffman JM, Reitman M, Donthu S, Ledwith P, Wills D. Microscopic characterization of CPVC failure modes. *Proceedings, ANTEC 2009, Society of Plastics Engineers, Chicago, IL, June 2009. Best Paper Award in Failure Analysis & Prevention.*

Reitman M, Ledwith P, Hoffman M, Moalli J, Xu T. Environmentally driven changes in nylon. *Proceedings, ANTEC 2008, Milwaukee, WI, Society of Plastics Engineers, May 2008.*

Hoffman JM, Reitman M, Ledwith P. Characterization of manufacturing defects in medical balloons. *Proceedings, ANTEC 2008, Milwaukee, WI, Society of Plastics Engineers, May 2008.*

Reitman, MTF, Moalli JE. Polymeric coatings for medical device. *Medical Device and Manufacturing Technology, Touch Briefings*, pp. 28–30, 2006.

Moalli JE, Moore CD, Robertson C, Reitman MTF. Failure analysis of nitrile radiant heating tubing. *Proceedings, ANTEC 2006, Society of Plastic Engineers, Charlotte, NC, May 2006.*

Reitman M, McPeak J. Protective coatings for implantable medical devices. *Proceedings, ANTEC 2005, Society of Plastic Engineers, Boston MA, May 2005.*

McPeak J, Reitman M, Moalli J. Determination of in-service exposure temperature of thermoformed PVC via TMA. *Proceedings, 31st Annual North American Thermal Analysis Society Conference, Williamsburg, VA, 2004.*

Reitman MTF, Moalli JE. Product development and standards organizations: Listings and certifications for plastic products. 8th Annual International Conference on Industrial Engineering Theory, Applications and Practice, Las Vegas, NV, 2003.

Potdar YK, Reitman MTF. The role of engineering consultants in failure analysis and product development. 8th Annual International Conference on Industrial Engineering Theory, Applications and Practice, Las Vegas, NV, 2003.

Ezekoye OA, Lowman CD, Hulme-Lowe AG, Fahey MT. Polymer weld strength predictions using a thermal and polymer chain diffusion analysis. *Polymer Engineering and Science* 1998; 38(6):976-991, June.

Fahey MT. Nonlinear and anisotropic properties of high performance fibers. MIT Thesis, 1993.

Fahey MT. Mechanical property characterization and enhancement of rigid rod polymer fibers. MIT Thesis, 1990.

Book Contributions

Reitman M, Jaekel D, Siskey R, Kurtz S. Morphology and crystalline architecture of polyaryleketones. pp. 49-60. In: *PEEK Biomaterials Handbook*. Kurtz SM (ed), Elsevier William Andrews, Kidlington, Oxford, UK, 2012. ISBN 13:978-1-4377-4463-7.

Tsuji JS, Mowat FS, Donthu S, Reitman M. Application of toxicology studies in assessing the health risks of nanomaterials in consumer products, pp. 543-580. In: *Nanotoxicity: From In Vivo and In Vitro Models to Health Risks*. Sahu S, and Casciano D. (eds), John Wiley & Sons, Chichester, West Sussex, UK, 2009. ISBN 978-0-470-74137-5.

Reitman MTF. The Plastics Revolution. In: *Research and Discovery: Landmarks and Pioneers in American Science*. Lawson RM (ed), Armonk NY: Sharpe Reference 2008. ISBN 978-0-7656-8073-0.

Klein SM. Mid-century plastic jewelry. Schiffer Publishing, Atglen, PA, 2005. (Technical advisor to author).

Selected Invited Presentations

Reitman MTF. Factors for success: Plastics in injection molded medical devices. Part of *Injection Molding Works for Medical Design*, Design News Webcast, October 2008.

Reitman MTF. Plastic and composite product failures. Keynote Speaker: Third International Conference on Engineering Failure Analysis (ICEFA III), Elsevier, Sitges Spain, July 2008.

Reitman MTF. Multiphase materials for medical device applications, an overview. Medical Device and Manufacturing (MDM), Canon Communications, various locations, January- June 2008.

Reitman MTF. Nanotechnology and plastics for medical devices. Capitalizing on Nanoplastics, Intertek PIRA San Antonio TX, February 2008.

Reitman MTF. Nano additives in composites and coatings for medical device applications. Medical Device and Manufacturing Minneapolis, Canon Communications, Minneapolis MN, October 2007.

Reitman MTF, Swanger LA. Practical tips on how to manage your technical expert in patent disputes. Ropes & Gray IP Master Class, Live Teleconference, June 2007.

Reitman MTF, Kennedy E. Root cause failure analysis and accident investigation. Lorman Educational Services, Live Teleconference, November 2007.

Reitman MTF. Plastics failure analysis: Case studies. Baltimore/ Washington Chapter of SAMPE, October 2006.

Reitman MTF. Plastics failure analysis. Baxter Global Plastics Processing Conference 2005, Schaumburg IL, 2005.

Fahey MT. Fiber mechanics, corrosion, sealants: Tales of a 3M materials scientist. Class of 1960's Scholars Program, Williams College, 1999.

Fahey MT. Adhesives and sealants for the telecommunications industry. Riverwood V Conference, St. Paul MN, 1998.

Current Professional Appointments

- Underwriter's Laboratory Standards Technical Panel STP 746 (Polymeric Materials, includes UL94, UL 746 and UL1694)
- Underwriter's Laboratory Standards Technical Panel STP 758 (Appliance Wires/ UL758)
- Medical Plastics Division Board of Directors, Society of Plastics Engineers

Professional Affiliations

- American Association for the Advancement of Science (member)
- American Association of Textile Chemists and Colorists—AATCC (senior member)
- American Chemical Society (member)
- ASTM International (member)
- Society for the Advancement of Material and Process Engineering (member)
- Society of Plastics Engineers (senior member)