

Exponent®
Engineering & Scientific Consulting

Tom Cotey, Ph.D.

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Professional Profile

Dr. Cotey is a materials scientist who specializes in the mechanical, chemical, and physical characterization of soft materials including thermoplastics, thermosets, hydrogels, organogels, nanomaterials, supramolecular assemblies, surfactants, and non-Newtonian fluids. Dr. Cotey focuses on structure property relationships and has broad experience with characterization techniques including rheometry, dynamic mechanical analysis (DMA), differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), Fourier-transform infrared spectrometry (FTIR), optical microscopy (OM), confocal laser scanning microscopy, and scanning electron microscopy (SEM). Dr. Cotey applies his experience to projects in numerous fields including consumer products, medical devices, coatings, and construction materials.

Prior to joining Exponent, Dr. Cotey was a graduate research assistant in the Department of Materials Science and Engineering at Northwestern University where he researched gelation processes, self-assembly of macromolecular structures, and structure-property relationships in a variety of soft materials.

Academic Credentials & Professional Honors

Ph.D., Materials Science and Engineering, Northwestern University, 2022

B.S.E., Polymer Science and Engineering, Case Western Reserve University, 2016

Prior Experience

Graduate Research Assistant, Northwestern University, 2016-2022

Undergraduate Research Assistant, Case Western Reserve University, 2014-2016

Undergraduate Research Assistant, Virginia Polytechnic Institute and State University, Summer 2015

Professional Affiliations

American Chemical Society

Publications

J. Kolberg-Edelbrock, T. Cotey, S.Y. Ma, L.M. Kapsalis, D.M. Bondoc, S.R. Lee, H. Sai, C.S. Smith, F. Chen, A.N. Kolberg-Edelbrock, M.E. Strong, S.I. Stupp, “Biomimetic Extracellular Scaffolds by Microfluidic Superstructuring of Nanofibers,” ACS Biomater. Sci. Eng., 2023

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O. Dumele, L. Đorđević, H. Sai, T. Cotey, H. Sangji, K. Sato, A. Dannenhoffer, S.I. Stupp, " Photocatalytic Aqueous CO2 Reduction to CO and CH4 Sensitized by Ullazine Supramolecular Polymers," JACS, 2022, 144, 3127–3136.

T. Cotey, H. Sai, C. Perez, L.C. Palmer, S.I. Stupp “Hybrid Gels Via Interfacial Complexation of Peptide Amphiphiles and Polyelectrolytes,” Soft Matter, 2021, 17, 4949-4956.

P.M. Peiris, P. Deb, E. Doolittle, G. Doron, A. Goldberg, P. Govender, S. Shah, S. Rao, S. Carbone, T. Cotey, M. Sylvestre, S. Singh, W.P. Schiemann, Z. Lee, E. Karathanasis, “Vascular Targeting of a Gold Nanoparticle to Breast Cancer Metastasis,” Journal of Pharmaceutical Sciences, 2015, 104, 2600–2610.

Presentations

“Gels Via Interfacial Complexation of Peptide Amphiphiles and Polyelectrolytes,” ACS Spring National Meeting 2020.

Poster Presentations

“Design and Fabrication of Chitosan Nanoparticles for the Delivery of Rosmarinic Acid” at Polymers in Medicine and Biology, 2015, Sonoma Valley, CA.