



Exponent[®]
Engineering & Scientific Consulting

Cathy Yang

Scientist | Polymer Science & Materials Chemistry
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Professional Profile

Ms. Yang is a materials scientist who is educated and trained in polymer characterization. Her experiences include optimization and physical characterization of polymer blends, acid copolymers, and ionomers with an in-depth understanding of the structure-processing-property relationship.

Ms. Yang is proficient in a wide range of materials characterization techniques including X-ray scattering (including small-, intermediate-, and wide-angle), scanning electron microscopy (SEM), energy-dispersive X-ray spectroscopy (EDS), atomic force microscopy (AFM), Fourier transform infrared (FTIR) spectroscopy, dynamic mechanical analysis (DMA), and electrochemical impedance spectroscopy (EIS), as well as thermal property methods including differential scanning calorimetry (DSC) and thermal gravimetric analysis (TGA). The focus of her master's thesis was characterizing and improving ion dynamics and conduction in polymer films for battery applications. She designed and fabricated solid-state polymer electrolyte membranes by blending acid polymers with heterocyclic molecules achieving order-of-magnitude improvements in proton conductivity.

Prior to joining Exponent, Ms. Yang worked in a biopharmaceutical R&D group in which she managed and developed physical and mechanical testing platforms for primary containers, pre-filled syringes, and combination products. She worked extensively on container closure system selection and container closure integrity testing from early stage method development and validation for biologics to preparation for regulatory submissions and drug product launch.

Academic Credentials & Professional Honors

M.S.E., Materials Science and Engineering, University of Pennsylvania, 2015

B.S., Physics, Bryn Mawr College, magna cum laude, 2012

Prior Experience

Bioprocess Associate, Teva Pharmaceuticals USA, 2016-2018

Languages

Mandarin Chinese

Publications

Yang HC, Wang JH, Masser H, Shiao H, O'Reilly MV, Winey KI, Runt J, Painter PC, Colby RH. Ion States and Transport in Styrene Sulfonate Methacryl PEO9 Random Copolymer Ionomers. *Macromolecules* 2015; 48 (19): 7273-7285.

Mehta SB, Yang HC, Roy, S. 'Product on Stopper' in a Lyophilized Drug Product: Cosmetic Defect or a Product Quality Concern? *Journal of Pharmaceutical Sciences* 2018; In Press.

Presentations

Yang HC, Griffin PJ, Winey KI. Structure and Proton Conductivity in Mixtures of Poly(acrylic acid) and Imidazole. Poster presentation, American Physical Society March Meeting, San Antonio, TX, 2015.

Yang HC, Nykaza J, Elabd YA, Winey KI. Morphology and Ionic Conductivity Studies of Polymerized Ionic Liquid Block Copolymers. Poster presentation, American Physical Society March Meeting, Denver, CO, 2014.

Yang HC, Lim SI, Liu J, Wu Q, Cheng XM. Templated Electrodeposition of Highly Porous Nanostructured Materials. Podium, American Physical Society March Meeting, Dallas, TX, 2011.