

Exponent®
Engineering & Scientific Consulting

Jiaqi Li, Ph.D.

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Professional Profile

Dr. Jiaqi Li specializes in fabrication and characterization of thin film materials, as well as design and fabrication of 3D nano-sized materials for lithium ion battery anodes. Her research expertise includes wet chemical syntheses of conformal functional coatings, sintering, shape-preserving chemical transformation of complex-shaped materials and characterization of nanostructured materials.

Dr. Li also has a deep understanding in thermodynamics and kinetics of gas-solid chemical reactions (e.g., metal oxidation, combustion, etc.). In addition, she is extensively experienced in various state-of-art material preparation and characterization tools, such as vacuum and inert atmosphere furnaces, auto-polisher, focused-ion beam (FIB) milling, optical microscopy (OM), scanning electron microscopy (SEM), energy-dispersive X-ray spectroscopy (EDS), X-ray diffraction (XRD), atomic force microscopy (AFM), Fourier transform infrared spectroscopy (FTIR), thermal gravimetric analysis (TGA), and quartz crystal microbalance (QCM). Dr. Li also has research experience in polymer composite bio-implant materials and related fatigue testing.

Prior to joining Exponent, Dr. Li was a graduate researcher at Purdue University, where she worked on multiple projects, including development of patterned high refractive index ceramic thin films for light-focusing devices, replication of bio-inspired nanostructures using wet conformal coating and chemical transformation reactions, as well as investigation of chemical reaction kinetics.

Academic Credentials & Professional Honors

Ph.D., Materials Engineering, Purdue University, 2020

B.S., Materials Science and Engineering, University of Science and Technology Beijing, 2015

Licenses and Certifications

Certified ISO 13485 Medical Device Management Systems Lead Auditor

CQI and IRCA Certified lead Auditor (ISO 9001:2015)

Professional Affiliations

Electrochemical Society (ECS)

Languages

Mandarin Chinese

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Publications

Li J, Hwang SH, Itskos G, Sandhage KH. Kinetic mechanism of conformal magnesium silicide (Mg2Si) film formation via reaction of Si single crystals with Mg vapor. Journal of Materials Science 2020; 55: 1107–1116.

Qiao K, Zheng YD, Guo SL, Tan J, Chen XH, Li J, Xu D, Wang J. Hydrophilic nanofiber of bacterial cellulose guided the changes in the micro-structure and mechanical properties of nf-BC/PVA composites hydrogels. Composites Science and Technology 2015; 118:47–54.

Representative Presentations

Li J. Growth kinetics of magnesium silicide formation via reaction of Mg gas and Si substrates. Oral presentation, 236th Electrochemical Society Meeting, Atlanta, Georgia, 2019.