

Exponent®
Engineering & Scientific Consulting


# Rachel Ye, Ph.D.

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## Professional Profile

Dr. Ye is formally trained in the field of mechanical engineering with a focus on next-generation lithium-ion battery nano materials. She is experienced with nano material synthesis methods such as sol gel, chemical vapor deposition, and electrospinning, as well as battery electrode fabrication and battery cell assembly.

Dr. Ye specializes in electrochemical characterization methods for lithium-ion batteries including galvanostatic cycling with potential limitation (GCPL), cyclic voltammetry (CV), and galvanostatic intermittent titration technique(GITT). Her other experiences include using scanning electron microscopy (SEM), Raman spectroscopy, X-ray powder diffraction (XRD), and energy-dispersive X-ray Spectroscopy (EDS) for material characterization.

Prior to joining Exponent, Dr. Ye was a graduate researcher at University of California, Riverside. She worked on various lithium-ion battery projects utilizing different new generation materials including nickel oxide, silicon, and sulfur. Her projects were focused on understanding lithium-ion batteries through the help of electrochemical evaluation.

## Academic Credentials & Professional Honors

Ph.D., Mechanical Engineering, University of California, Riverside, 2018

B.S., Mechanical Engineering, University of California, Riverside, 2013

## Languages

Mandarin Chinese

## Publications


*Bell, J., *Ye, R., Patino, D., Ahmed, K., Scott, A., Peng, L., ... & Ozkan, C. S. (2018). Plateau targeted conditioning: An additive-free approach towards robust SEI formation in Li-S batteries for enhanced capacity and cycle life. Nano Energy, 49, 498-507.

*Ye, R., *Bell, J., Patino, D., Ahmed, K., Ozkan, M., & Ozkan, C. S. (2017). Advanced Sulfur-Silicon Full Cell Architecture for Lithium Ion Batteries. Scientific reports, 7(1), 17264.

Wang, W., Favors, Z., Ionescu, R., Ye, R., Bay, H. H., Ozkan, M., & Ozkan, C. S. (2015). Monodisperse porous silicon spheres as anode materials for lithium ion batteries. Scientific reports, 5, 8781.

Ahmed, K., Bell, J., Ye, R., Dong, B., Li, Y., Ozkan, C. S., & Ozkan, M. (2017). A Study of Diffusion in

Lithium-ion Electrodes Under Fast Charging Using Electrochemical Impedance Spectroscopy. MRS Advances, 2(54), 3309-3315.

Liu, J., Campbell, B., Ye, R., Bell, J., Mutlu, Z., Li, C., ... & Ozkan, C. (2017). Facile and Scalable Synthesis of Copolymer-Sulfur Composites as Cathodes for High Performance Lithium-Sulfur Batteries. MRS Advances, 2(54), 3271-3276.

Wang, W., Favors, Z., Li, C., Liu, C., Ye, R., Fu, C., ... & Ozkan, C. S. (2017). Silicon and carbon nanocomposite spheres with enhanced electrochemical performance for full cell lithium ion batteries. Scientific Reports, 7, 44838.

Bell, J., Ye, R., Ahmed, K., Liu, C., Ozkan, M., & Ozkan, C. S. (2015). Free-standing Ni-NiO nanofiber cloth anode for high capacity and high rate Li-ion batteries. Nano Energy, 18, 47-56.

*indicate equal contribution

**Presentations**

Ye, R., Bell, J., Patino, D., Ahmed, K., Ozkan, M., Ozkan, C. An Alternative to Prelithiation for Full Cells Utilizing Sulfur Cathodes. Oral Presentation, Materials Research Society, Phoenix, AZ, 2018