



# Mechanical Constriction Design for Advanced Performance of Solid State Batteries

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**Bio:** Prof. Xin Li is an associate professor of materials science at School of Engineering and Applied Sciences at Harvard University. Xin Li's research group designs new energy related materials and systems through advanced synthesis, characterization and simulation, with the current focus on solid state batteries and unconventional superconductors. Xin Li received his B.S. in Physics from Nanjing University in China, PhD in Materials Science and Engineering from Prof. Dickey's group at Pennsylvania State University and performed postdoctoral research in Prof. Zewail's group at CalTech and Prof. Ceder's group at MIT before joining Harvard in 2015.

## Abstract

All-solid-state battery system poses new challenges to the battery design due to the unique solid-solid interfaces at battery cathode and anode. However, these interfaces, upon critical understanding and design, also form the new opportunity to achieve battery performances beyond the commercial liquid electrolyte Li-ion batteries. We design the lithium metal anode solid state batteries by our unique mechanical constriction principle, making a more stable cycling at high current densities.

