My research interests lie in the surface chemistry of oxides materials used in solid oxide fuel cells, especially for the oxygen reduction at the cathode side. My work at MIT is focused on developing easy and efficient ways of surface modification of cathodes to address both contamination issues (Cr, Si) and strontium segregation, that affect the oxygen surface exchange reaction.
My second research project focuses on understanding the dominant mechanisms governing field assisted sintering as a function of material electrical properties, microstructure evolution and environmental conditions.