Pt-Cu catalysts for Polymer Electrolyte Membrane Fuel Cell (PEMFC)

Pt catalyst in cathode is inefficient and expensive. Develop Cu-Pt catalysts.

Active Pt-Cu electrocatalysts:
• what is nature of dealloyed catalyst?
• how does this affect the activity?
• how does catalyst change during fuel cell operation?

Dealloyed Pt-Cu shows a factor of 4-5x improvement over Pt

In-Situ diffraction cell to watch of Pt$_{25}$Cu$_{75}$ during dealloying and operation