



Inorganic Chemistry Seminar Series

Tuesday, September 19, 2017, 12:30 pm

Seaver Science Center, Room 150

SSC Auditorium next to the library

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Boron: Enabling Magnetic Electrocatalytic Materials

Abstract:

Like carbon and silicon, boron tends to form covalent molecular as well as extended compounds, but boron's "electron deficiency" enables the formation of multicenter B–B bonds, and therefore unexpected compounds. Boron reacts with most metals to form the large class of metal borides, ranging from the boron-richest YB_{66} monochromator up to the metal-richest $\text{Nd}_{14}\text{Fe}_2\text{B}$ permanent magnet.¹ This huge composition range coupled with the unusual chemical bonding make this class of materials an ideal playground for unexpected discoveries. In this seminar, I will present our recent work on "designing" new magnetic and electrocatalytic materials, all of which contain boron. I will show that in many cases boron does not only help build new crystal structures but it also plays a prominent role on the studied properties.

The scientific community is invited

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