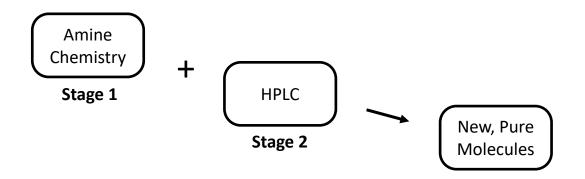
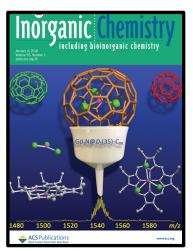
## I. New Chemical Separation Opens the Door to Rare Metallofullerenes



## **II. First X-ray Crystal Structures (Journal Cover Features)**







 $Gd_3N@C_{88}$ 

<u>Inorg. Chem.</u>, 55, 62-67 (**2016**)

Er<sub>2</sub>C<sub>2</sub>@C<sub>92</sub>

<u>Chem. Eur. J.</u>, 24, 13379 (**2018**)

 $\mathrm{Ho_3N@C_{78}}$ 

<u>Chem. Eur. J.</u>, 25, 12449 (**2019**)

**Project Outcome** – We discovered and developed a new purification strategy using chemical reactivity differences to isolate rare molecules that otherwise would not be available for scientific study.

Impact & Benefits – These molecules are useful to society for application areas in energy, optics, and medical (e.g., MRI and X-ray contrast agents, and radiopharmaceuticals).

Background & Explanation – This new separation method is scalable and opens the door globally for scientists to finally have access to large amounts of purified samples. This method will replace the poor, conventional method that has been used for the last 30 years.