PURIFICATION OF METAL-ORGANIC FRAMEWORK MATERIALS

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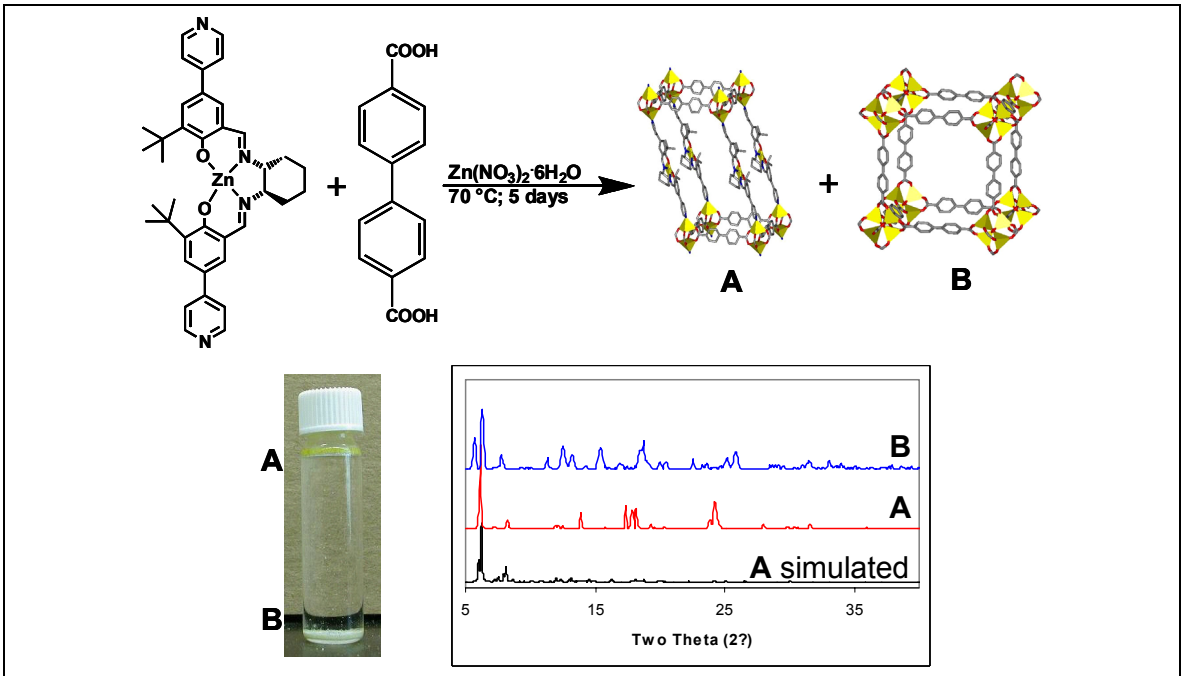
Metal-organic frameworks (MOFs) have potential applications in sensing, optoelectronics, gas storage, gas separation and heterogeneous catalysis. Since MOFs are insoluble solid materials, traditional purification techniques such as chromatography, extraction and recrystallization are inapplicable. A physical-manual-separation is commonly used which involves separating the MOF crystals with tweezers utilizing a microscope. Researchers at the NU-NSEC developed a powerful way to separate MOFs utilizing differences in density. With this purification method the desired phase can be readily isolated allowing multiple phases to be used.



Purification of a salen metal-organic framework (A) from impurities (B) using the difference in the material density. The purity of A is crucial since it will be used in catalysis.