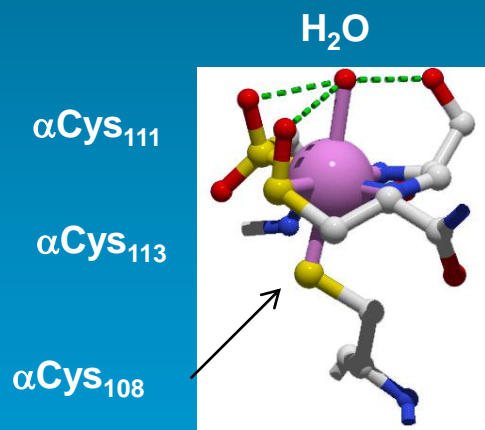


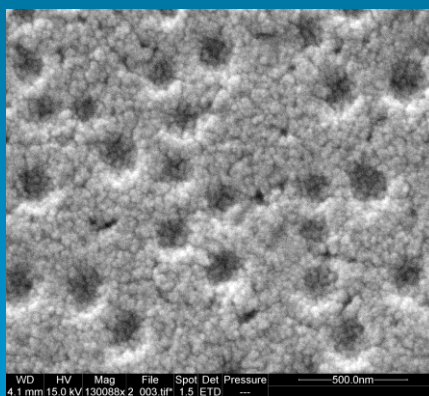
Conversion of Nitriles to Amides: Novel Biomaterials for Petroleum Feedstock Refining

Richard C. Holz, Department of Chemistry and Biochemistry, Loyola University
Chicago, Chicago, IL 60626

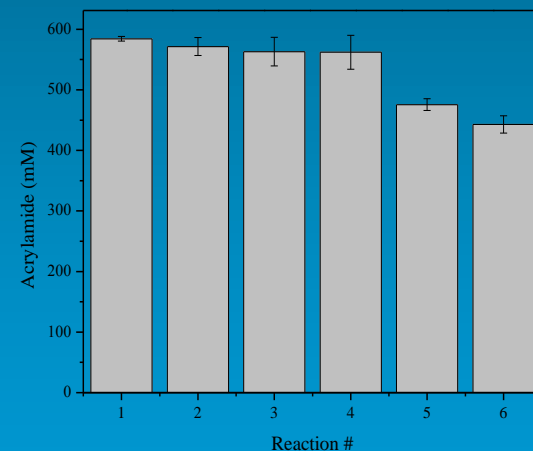
Nitrile Hydratase Biocatalysts: Immobilization of enzymes and proteins within silica glasses derived through sol-gel processing has resulted in the generation of novel, functional biomaterials which are optically transparent and sufficiently porous to permit small substrates access to the entrapped enzyme.



Active site of the nitrile hydratase from *Pseudonocardia thermophila* JCM 3095 (PtNHase).



Scanning electron micrograph of a TMOS PtNHase:sol-gel.



Production of acrylamide using recycled PtNHase:sol-gels at pH 7.5 and 35 °C.

We have prepared new, functional biomaterials by immobilizing NHase enzymes within silica glasses derived through sol-gel processing.