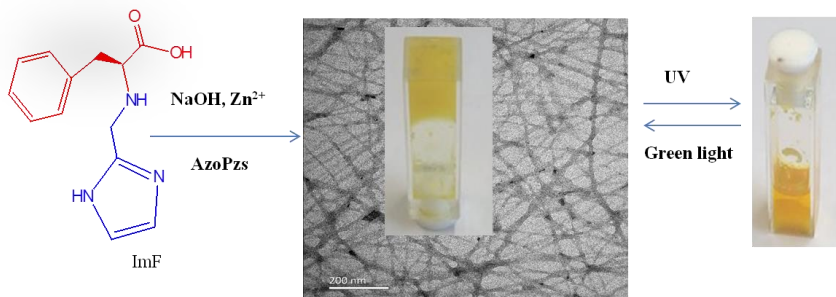
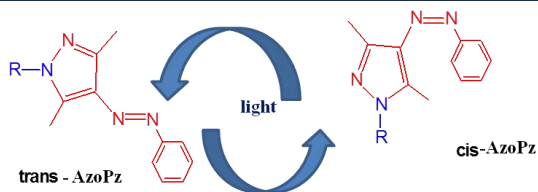
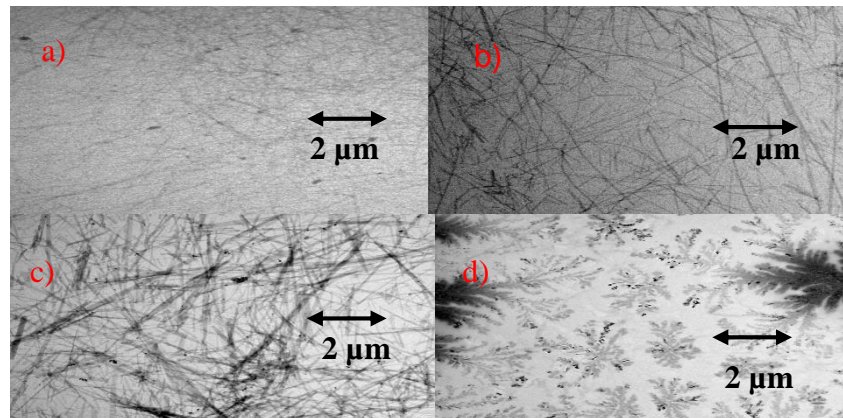


Hampton PREM Research Highlight



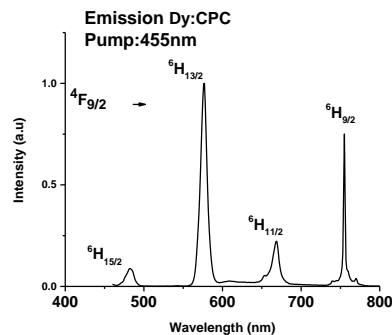
Fabrication of metallohydrogels with light-induced gel-to-sol phase transitions.



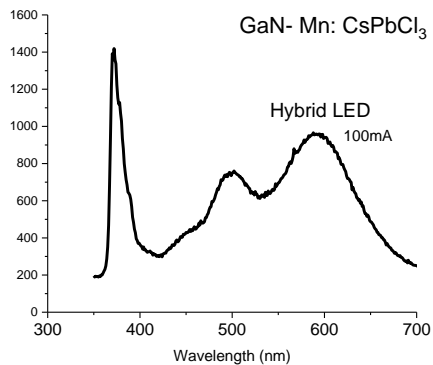
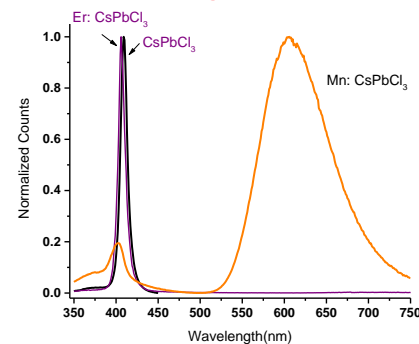
TEM images of Photoswitchable Metallohydrogels

Halide Perovskites

Dy: CsPbCl₃
"Yellow Emission"



Mn: CsPbCl₃
"Orange Emission"



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Metal doped Halide Perovskites

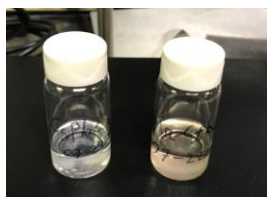
- > Optoelectronics (lasers, LED's)
- > Radiation Detection

Material Development at HU

- > Bridgman crystal growth
- > microwave-assisted synthesis of nanoparticle synthesis

Microwave assisted synthesis

Bridgman Crystal Growth



Mn:CPC

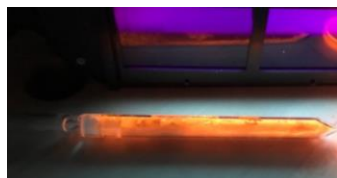


Undoped CPC

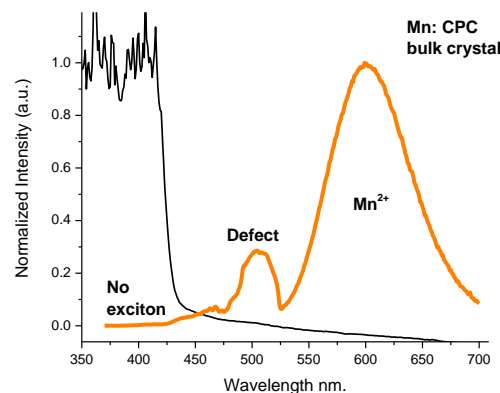


Mn: CPC

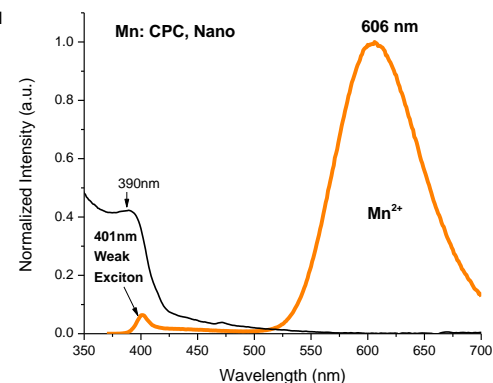
Under -UV light



Optical Spectroscopy: Emission Studies



Bulk Crystal



Nano-particles

Main results:

- > Bulk and nano Mn: CPC showed bright orange emission with ~50% quantum efficiency
- > Bulk and nano Mn: CPC revealed distinct optical excitation mechanism under optical pumping

Education & Research Training

Online Research Courses: PHY 191 & PHY 291

New course modules were developed in lasers laser safety & laser spectroscopy for freshman and sophomore research courses