Claim:
Synthesis of new subclass of ZIF type metal-organic frameworks that exhibit prominent increase in CO$_2$ adsorption capacity and selectivity in comparison with their isostructural ZIFs

Novelties:
Application of imidazolones as linkers in synthesis of metal-organic framework type gas adsorbents with tailorable pore properties and topology

Features:
- High chemical and thermal stability
- Higher affinity toward adsorption of CO$_2$ compared with their isostructural ZIFs
- Higher selectivity to separate CO$_2$

Milestones—to-date:
- Finished building prototype and its Dem-Val

Potential Applications:
- CO$_2$ capture and storage
- Gas separation
- Catalysis

Competitive Industry Players:
- GE
- BASF
- Bosch
- Shell Springboard
- CleanEquity Monaco

Inventors Expertise
Nasser Khazeni
PhD Candidate, IEE/WERC, NMSU
Dr. Abbas Ghassemi
Professor, Director of IEE/WERC, IEE/WERC, NMSU
Dr. Reza Foudazi
Assistant Professor, Department of Chemical & Materials Engineering
Dr. Jalal Rastegary
Research Engineer, IEE/WERC, NMSU

For more information please contact:
Terry Lombard at 575.646.5398 or tlombard@ad.nmsu.edu