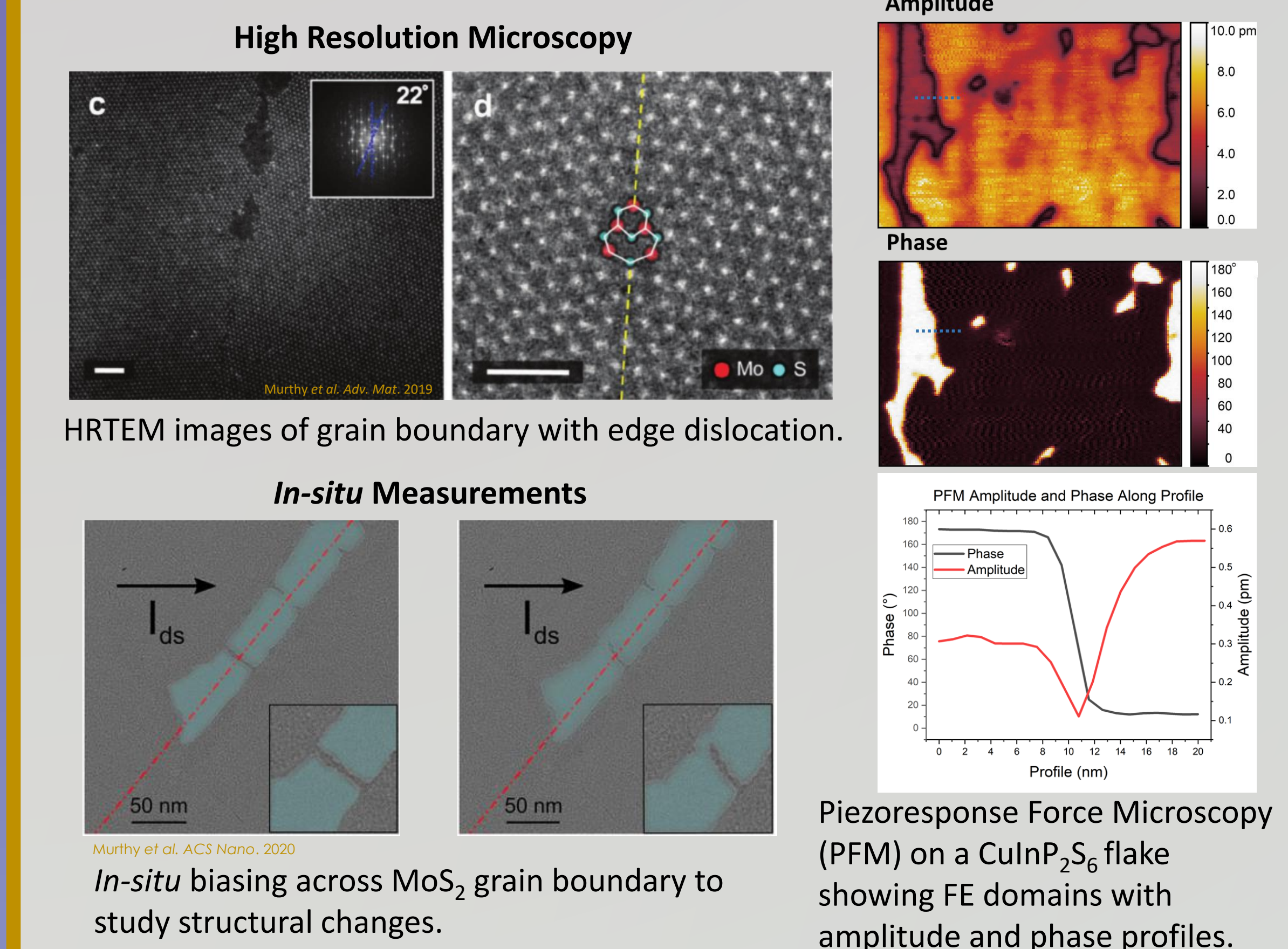
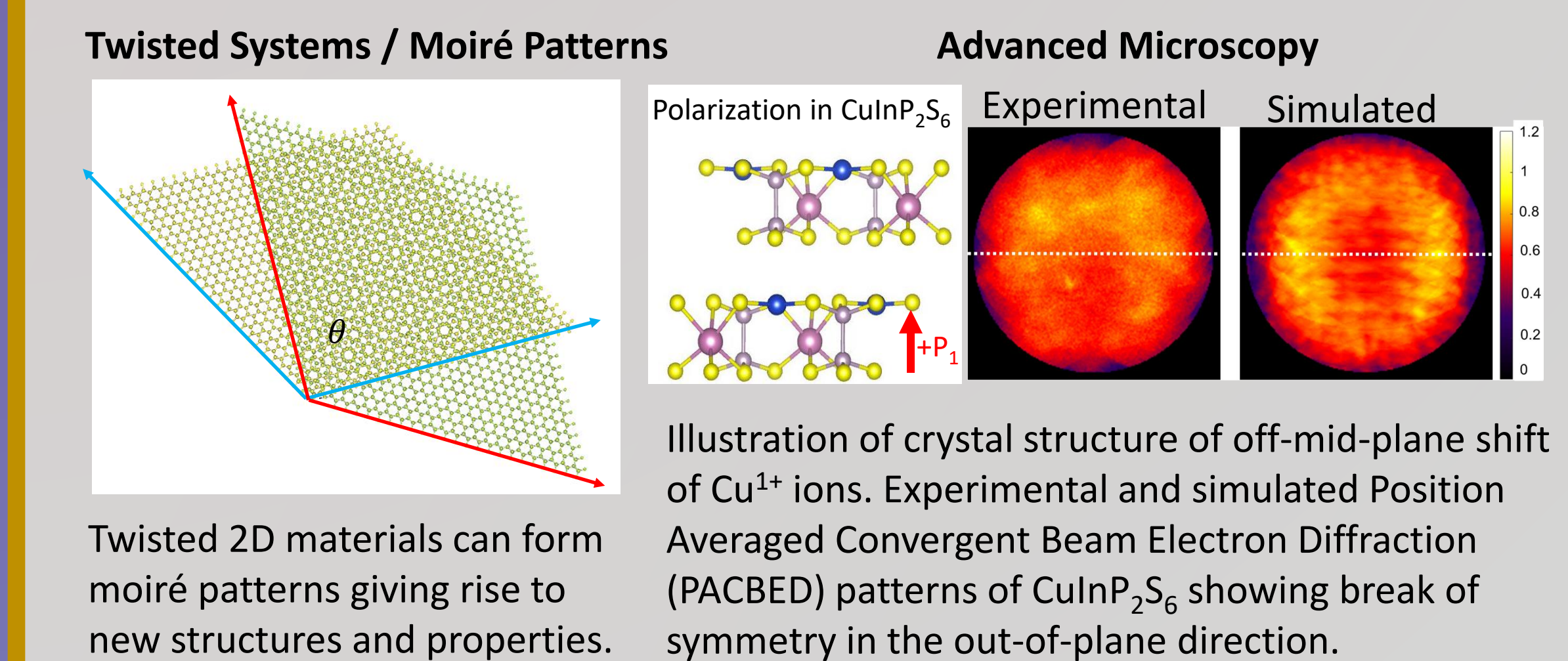
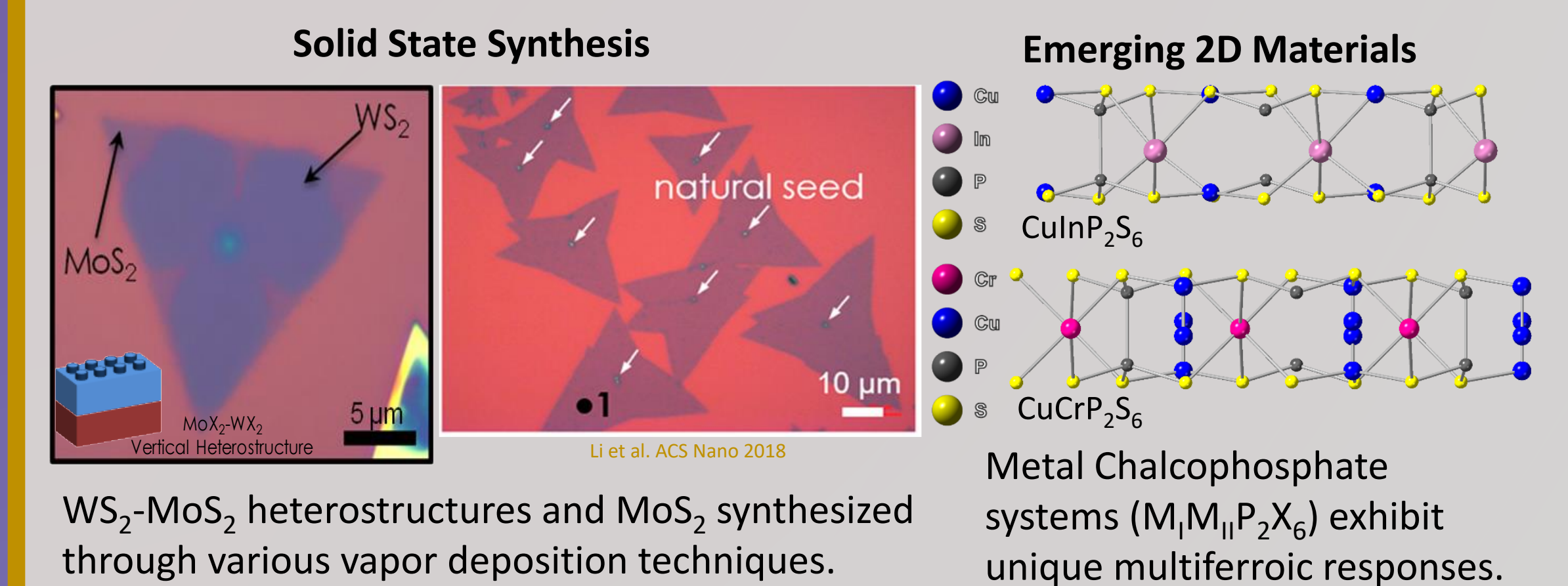


Surfaces & Interfaces in Quantum Materials

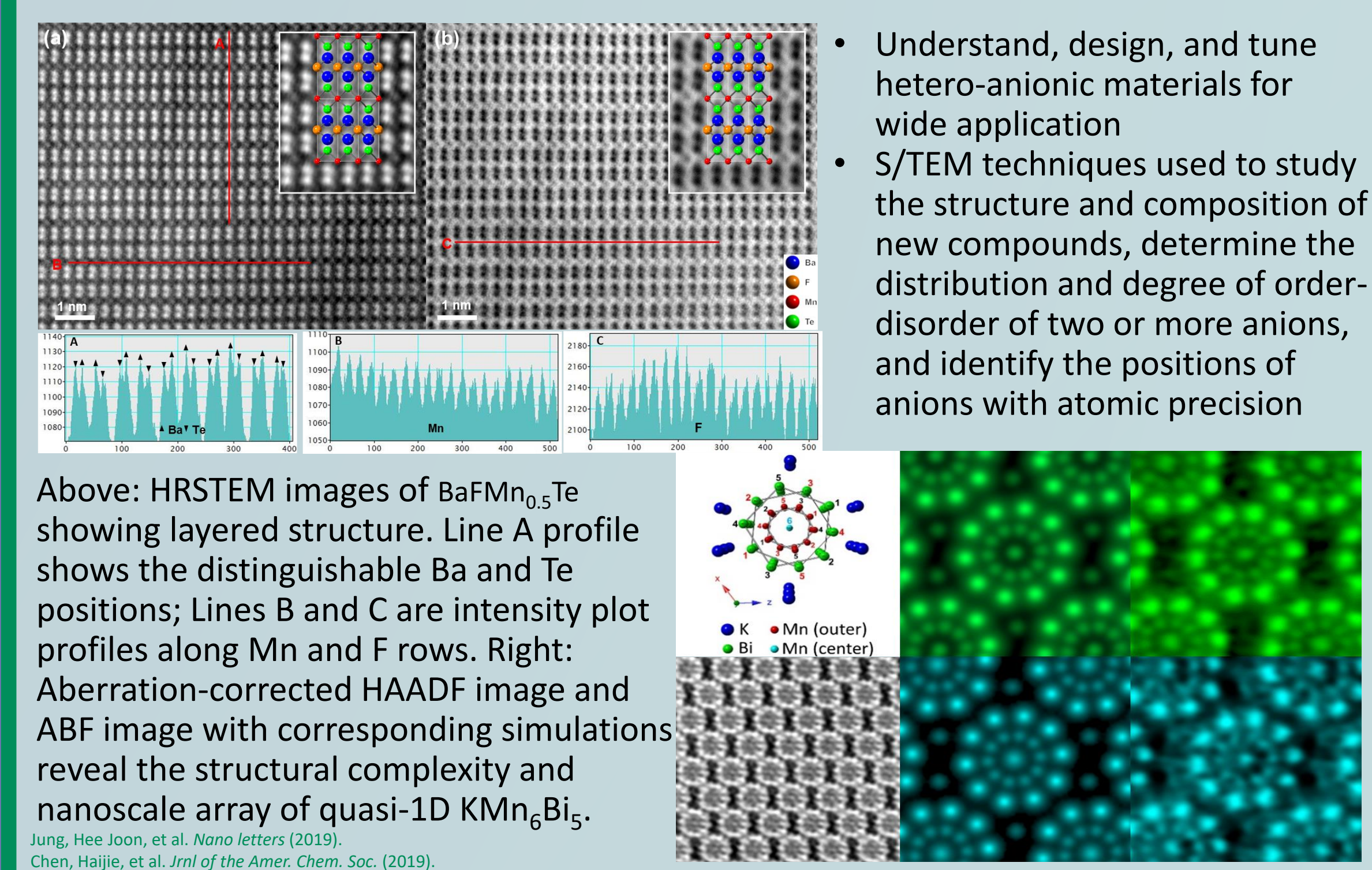
Characterization and Synthesis of 2D Materials

Jennifer DiStefano, Matthew Cheng, Yea-Shine Lee, Dr. Roberto dos Reis
Collaborators: Profs. M. Kanatzidis, C. Wolverton, M. Hersam, K. Aydin, N. Stern, V. Chandrasekhar



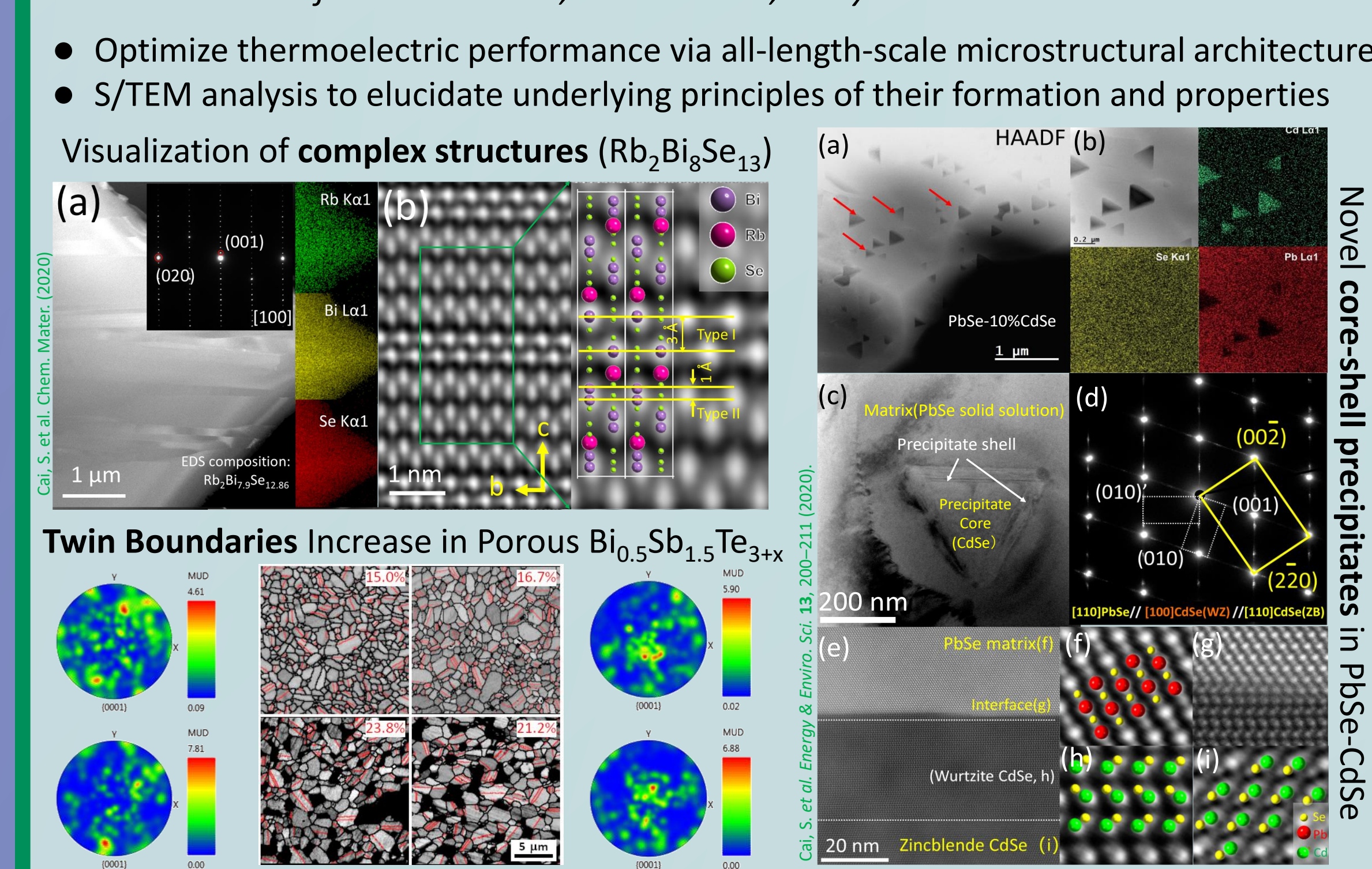
Heteroanionic Materials

Dr. Hee Joon Jung, Chi Zhang, Dr. Roberto dos Reis
Collaborators: Profs. M. Kanatzidis, K. Poepelmeier, S. Haile, J. Rondinelli, T. Marks



Hierarchically Architected Thermoelectrics

Jann Grovogui, Songting Cai, Dr. Roberto dos Reis
Collaborators: Profs. M. Kanatzidis, C. Wolverton, J. Snyder

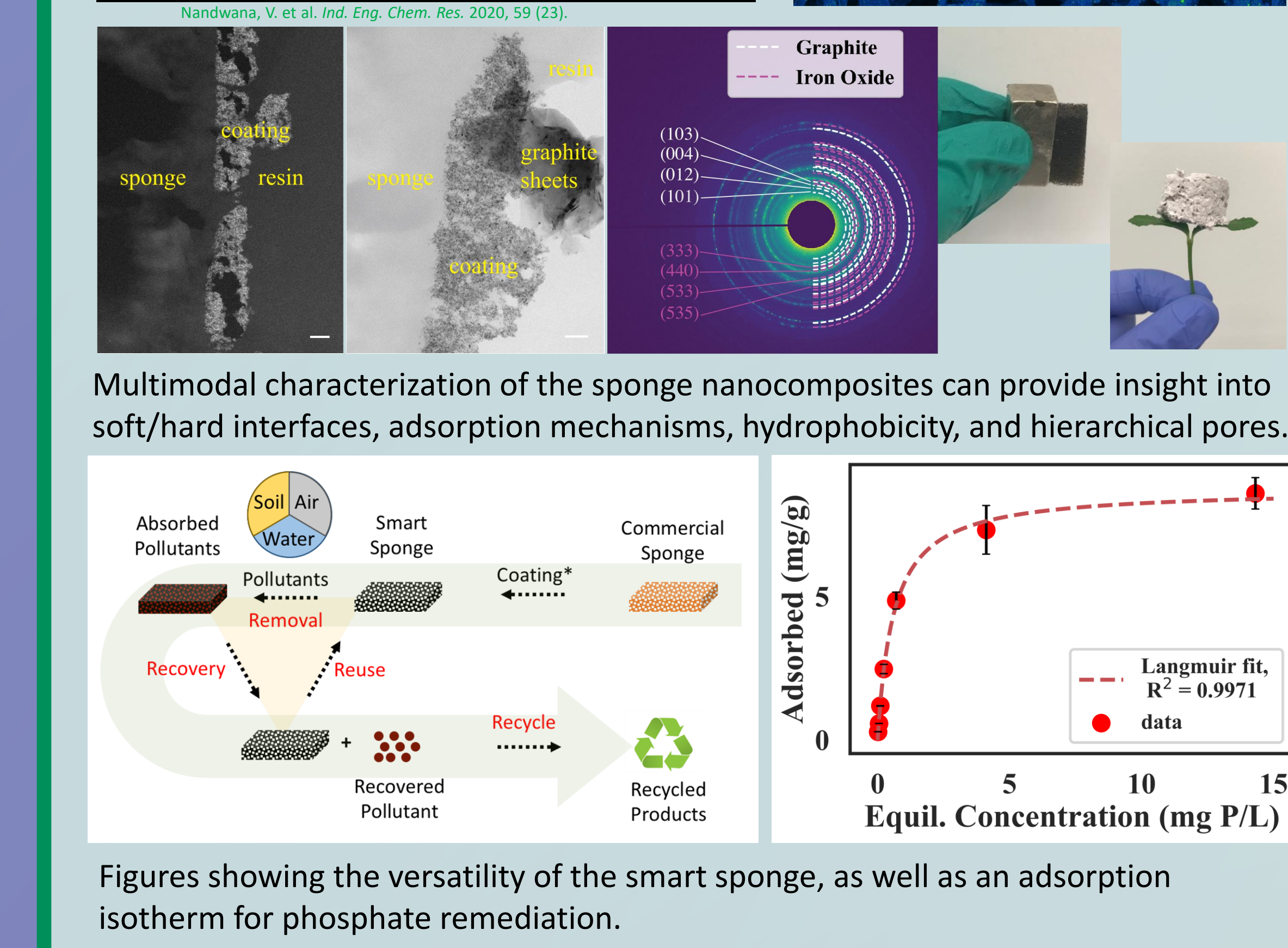
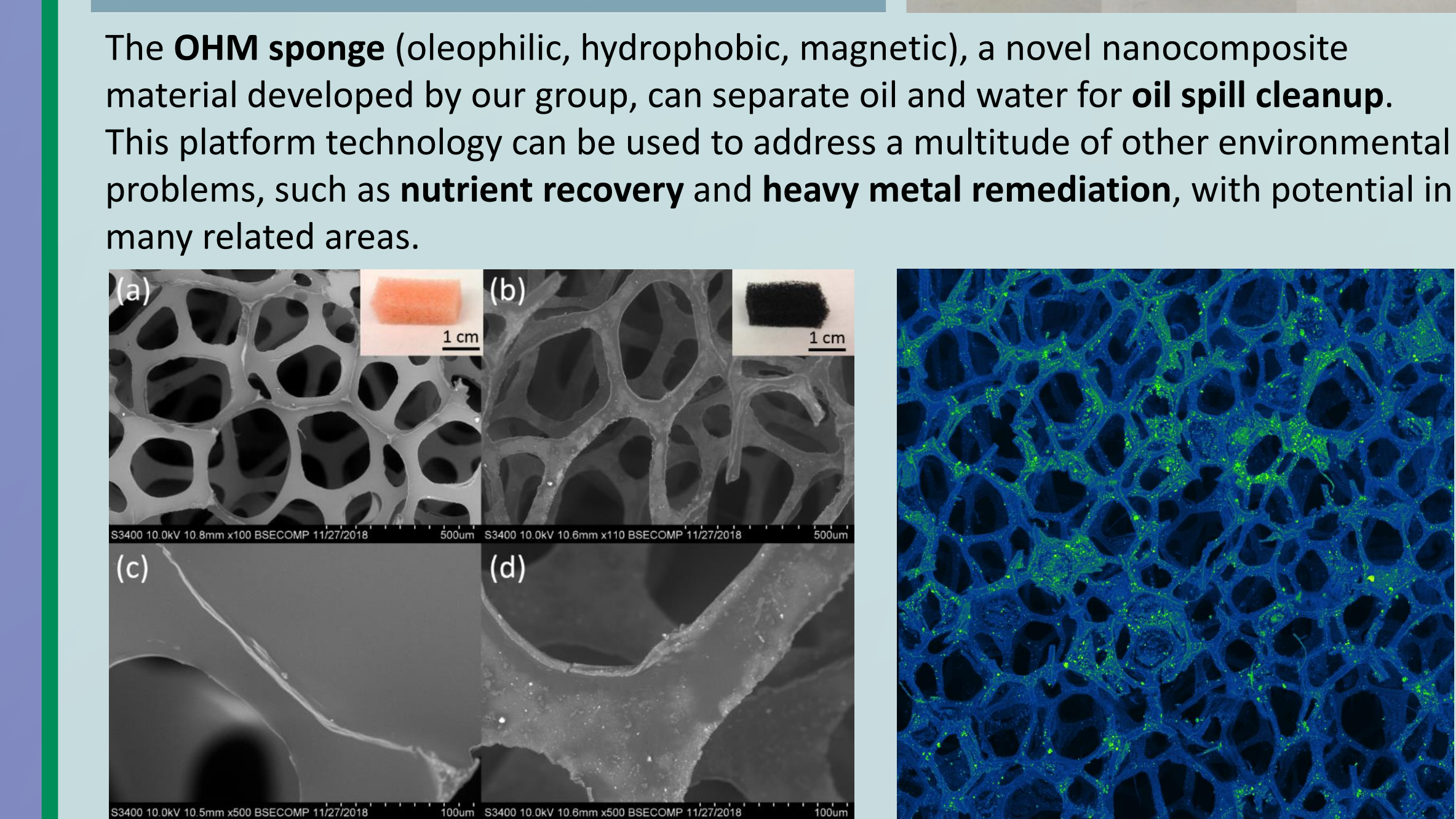
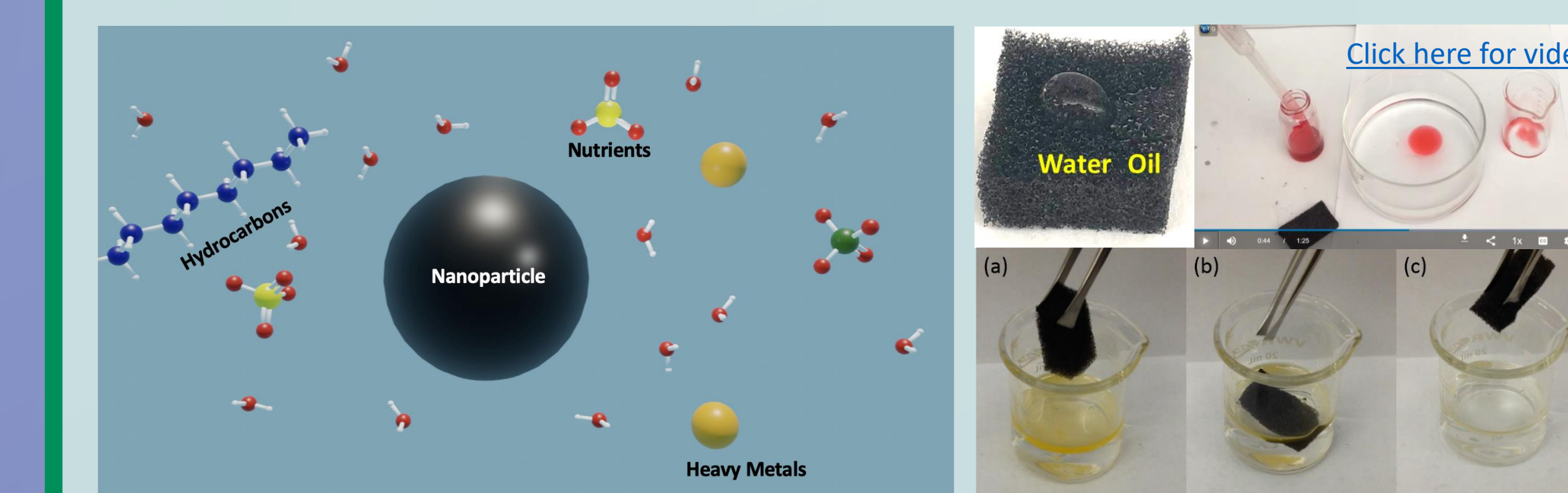


- Alumni:** 42 PhD graduates with a variety of placements including: UNIVERSITY OF CALIFORNIA SANTA CRUZ, ARGONNE NATIONAL LABORATORY, IBM, intel, Apple, Penn State, McKinsey & Company, GE
- Current:** 13 PhD students, including 5 co-advised with Professors C. Mirkin, M. Kanatzidis, E. Scott, and K. Poepelmeier
- Research:** h-index: 99; over two dozen patents, including light-induced gas sensors, theranostic nanoparticles, and nanolithography
- Synergy:** Developed NUANCE and SHyNE centers; ability to work closely with dozens of talented research scientists
- Outreach:** Group members participate in and serve on the boards of a number of outreach activities, including GradSWE, BGSA, Junior Science Club, Letters to a Pre-Scientist, SHIP, MatSAIC, and MSSA; NSF-NNCI National Leadership; Chicago Area Museums
- Education:** Course and curriculum development; hands-on labs as the norm; >1200 graduated microscopy students

Materials for Energy & the Environment

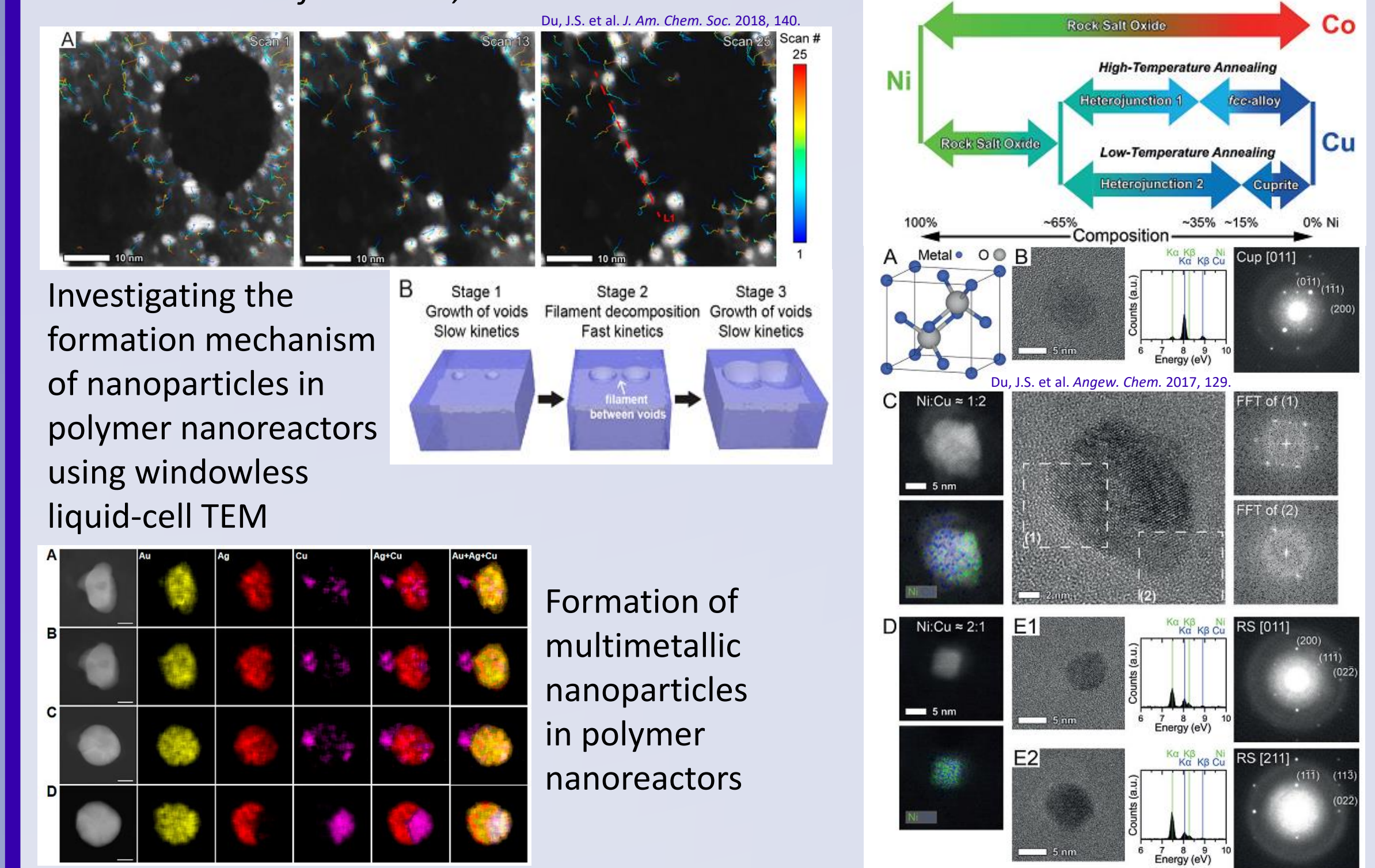
Environmental Remediation

Dr. Vikas Nandwana, Stephanie Ribet, Benjamin Shindel, Yash More, Caroline Harms
Collaborators: A. Packman, W. Dichtel, O. Farha



Complex Nanoparticle Systems

Jingshan Du, Carolin Wahl
Collaborators: Prof. C. Mirkin, C. Wolverton



Magnetic Nanostructures & MNS-Soft Interfaces

Dr. Vikas Nandwana, Cesar Villa, Chamille Lescott, Stephanie Ribet, Dr. Sonali Dhindwal, Eric Roth, Dr. Reiner Bleher
Collaborator: Profs E. Scott, T. Meade, C. Mirkin

MNS intercalation between graphitic layers improves the performance of battery anode material, visualized here with TEM

MNS Synthesis
Size, Shape, and Composition Control

Biomedicine
Diagnostic Imaging and Therapy

Energy & Sensing
Biosensing, Energy Storage
Heavy Metal detection

Nanomanufacturing
Mass production of Nanostructures

Analytical microscopy on polymer-MNS composites: EDS mapping confirms association of Sulfur-based polymer & MNS

Soft Microscopy

Kelly Parker, Chamille Lescott, Eric Roth, Dr. Reiner Bleher, Dr. Roberto dos Reis, Dr. Sonali Dhindwal
Collaborators: Profs M. Mrksich, C. Mirkin, L. Drummy, M. Jewett, R. Leapman, O. Farha, W. Dichtel

