

PROFESSIONAL PROFILE

- 13 years of hands-on experience in conventional and advanced S/TEM analysis, related analytical techniques and sample preparation methods
 - Comprehensive expertise in conventional and advanced (aberration-corrected) **S/TEM techniques**: defect imaging, HREM, HAADF-STEM, EDS, EELS, electron diffraction, electron tomography (ET), 3D electron diffraction tomography (3D-EDT), low-dose imaging, among others
 - Mastery of TEM-related **sample preparation skills**: mechanical polishing and FIB lift-out techniques
 - Proficiency in TEM-related analysis **softwares**: MacTempas, JEMS, DigitalMicrograph, CrystalKit, CrystalMaker, Materials Studio, Matlab, IMOD, Chimera, Fiji, QFocus, RED
 - Fluency in TEM, SEM, FIB, XRD; familiarity with XPS, FTIR, DSC, TGA, BET
- Extensive experience in **materials characterization** of multifunctional oxides, superconductor, semiconductors, catalytic and beam-sensitive porous materials
- **Materials Processing**: Pulsed-laser deposition (PLD); reactive radio-frequency magnetron sputtering; Vacuum, thermo-chemical treatment; Ceramic powder processes
- Proven success in technique development, project management, instrument maintenance, collaboration, and tutoring

PROFESSIONAL EXPERIENCE

- 12/2017 – **Electron Microscopy Specialist**, RENEW Institute, University at Buffalo **US**
- 07/2015 – 08/2017 **Senior Engineer**, Research Institute of Petroleum Processing, Sinopec **CN**
- Led scientific projects.
 - Managed design and implementation of the analysis of laboratory or commercial catalysts for Sinopec and other petroleum & petrochemical companies.
 - Managed the regularly operation and maintenance of AC-S/TEM. Trained and assisted users on conventional and advanced S/TEM, including AC-S/TEM.
 - Investigated the structural characterization and unknown structure determination of zeolite catalytic materials.
- 09/2013 – 06/2015 **Postdoctoral Researcher**, Department of Materials and Environment Chemistry, Stockholm University **SE**
- Studied structure determination of unknown structures by electron and X-ray crystallography.
 - Developed a new atomic-resolution electron tomography technique.
 - Integrated the ET and 3D-EDT methods to study the morphology and structure simultaneously.
- 03/2011 – 08/2013 **Postdoctoral Researcher**, Department of Materials Science and Engineering, University of Michigan **US**
- Collaborated with researchers from Cornell University, University of Wisconsin-Madison and Florida State University to explore atomic structures of pnictide superconductors and oxide heterostructures. The results were published in top scientific journals.
 - Developed a TEM sample preparation method which greatly improve the quality and success rate of TEM samples.
 - Trained lab members ranging in skill levels on general operations of Cs-corrected STEM and sample preparation.

EDUCATION

- 10/2008 – 10/2010 **Visiting Ph.D. Student, Materials Science and Engineering**, University of Michigan, Ann Arbor, MI **US**
- 09/2006 – 12/2010 **Ph.D., Materials Physics & Chemistry**, Nanjing University, Nanjing, China **CN**
- Gained extensive experience in Cs-corrected STEM and EELS, including simulation and hands-on operation. Understood different order of aberration theoretically and intuitively, and excelled in adjusting aberration manually in engineer service mode.
 - Studied dislocations and grain boundaries in functional oxide material, and their relation to electrical, mechanical and thermal properties accordingly.
 - Proposed and experimentally demonstrated the mechanism of strong flux pinning in new pnictide superconductors.
- 09/2004 – 07/2006 **M.S., Materials Physics & Chemistry**, Nanjing University, Nanjing, China **CN**
- 09/2000 – 07/2004 **B.S., Materials Physics & Chemistry**, Nanjing University, Nanjing, China

AWARDS

- 2014 "IMC-Scholarship" International Microscopy Congress, Prague, Czech Republic
- 2011 "Distinguished Scholar Award" Microscopy & Microanalysis, Nashville TN
- 2008 "China Scholarship Council (CSC) Scholarship" (awarded for two years), Nanjing, China
- 2004 "Outstanding graduates Awards", Nanjing, China

PUBLICATIONS

- Published a total of **31** scientific papers.
- Publication list: <https://drive.google.com/open?id=0B2lAtwNS5oxYUUUwOUFZdkVTRiQ>