

YING SHIRLEY MENG, PH.D.**Associate Professor**[Department of NanoEngineering](#)

University of California San Diego
 Room 242G, SME Building (MCO448)
 La Jolla, California 92093-0448
 858-822-4247 (phone) 858-534-9553 (fax)
 shirleymeng@ucsd.edu (email)

Founding Director of[Sustainable Power and Energy Center \(SPEC\)](#)**Affiliated Faculty with**

[Center for Memory Recording Research](#)
[Materials Science & Eng. Program](#)

a. Education and Training

Massachusetts Institute of Technology

Singapore-MIT Alliance, National University of Singapore

Nanyang Technological University, Singapore

Postdoc

2005 – 2007

Ph.D

2000 – 2005

B.A.Sc (Matl. Eng.)

1996 – 2000

1st class honor**b. Research and Professional Experience**

2013 – Present Associate Professor, NanoEngineering, University of California, San Diego

2009 – 2013 Assistant Professor, NanoEngineering, University of California, San Diego

2009 – 2013 Adjunct Professor, Materials Science and Engineering, University of Florida

2008 – 2009 Assistant Professor, Materials Science and Engineering, University of Florida

2007 – 2008 Research Scientist, Materials Science and Engineering, MIT

c. Peer-Reviewed Journal Publications (Total 107; H-index 35, Total citation >5900, info from web of science, *corresponding author)

1. Sunny Hy, H.D. Liu, M. Zhang, D. Qian, B.-J. Hwang, Y. S. Meng*, "Performance and design considerations for the lithium excess layered oxide positive electrode materials for lithium ion batteries", **Energy & Environmental Science**, just accepted, 2016.
2. A. Ulvestad, A. Singer, J.N. Clark, H.M. Cho, J.W. Kim, R. Harder, J. Maser, Y.S. Meng*, and O.G. Shpyrko "3D operando imaging of topological defect dynamics in battery nanoparticles", **Science**, 348, 1344, 2015.
3. A. Ulvestad, A. Singer, H. Cho, J. N. Clark, R. Harder, J. Maser, Y. S. Meng, and O. G. Shpyrko, "Single Particle Nanomechanics in Operando Batteries via Lensless Strain Mapping", **Nano Letters**, 14(9), 5123, 2014.
4. D. Qian, B. Xu, M. Chi, Y.S. Meng*, "Uncovering the roles of oxygen vacancies in cation migration in lithium excess layered oxides", **Physical Chemistry Chemical Physics**, 16, 14665, 2014.
5. Y-S. Yu, C. Kim, Y. Liu, A. van der Ven, Y. S. Meng, R. Kostecki and J. Cabana, "Non-equilibrium Pathways during Electrochemical Phase Transformations in Single Crystals Revealed by Dynamic Chemical Imaging at Nanoscale Resolution", **Advanced Energy Materials**, 1402040, 2014.
6. J. Xu, D. H. Lee, R. J. Clement, X. Yu, M. Leskes, A. J. Pell, G. Pintacuda, X.-Q. Yang, C. P. Grey, Y. S. Meng*, "Identifying the Critical Role of Li Substitution in $P2-Na_x[Li_yNi_zMn_{1-y-z}]O_2$ ", **Chemistry Materials**, 26, 1260-1269, 2014.
7. C. R. Fell, D. Qian, K. J. Carroll, M. Chi, J. L. Jones, Y. S. Meng*, "Correlation between oxygen vacancy, microstrain, and cation distribution in Lithium-excess layered oxides during the first electrochemical cycle", **Chemistry of Materials**, 25(9), 1621-1629, 2013.
8. D. H. Lee, J. Xu, Y. S. Meng*, "An advanced cathode for Na-ion batteries with high rate and excellent structural stability", **Phys. Chem. Chem. Phys.**, 15, 3304-3312, 2013

9. D. Qian, Y. Hinuma, H. Chen, L-S. Du, K. J. Carroll, G. Ceder, C. P. Grey, and Y. S. Meng*, "Electronic spin transition in nanosize stoichiometric lithium cobalt oxide", **Journal of American Chemical Society**, 134(14), 6096-6099 2012.
10. B. Xu, C. R. Fell, M. Chi, and Y. S. Meng*, "Identifying surface structural changes in layered Li-excess nickel manganese oxides in high voltage lithium ion batteries: A joint experimental and theoretical study", **Energy & Environmental Science**, 4, 2223-2233, 2011.

d. Awards

2016, Finalist for Clean Energy, Education and Empowerment Award (Research Category)
2015, Frontier of Innovation Award
2014, Science Award Electrochemistry by BASF and Volkswagen
2013, Chancellor's Interdisciplinary Research Award
2011, National Science Foundation (NSF) CAREER Award
2011, Christopher Fell (Meng's first Ph.D. student) won the Student Award of Battery Division, the Electrochemical Society.

e. Synergistic Activities

Editor – **Journal of Power Sources** (IF 6.7)

Associate Editor – **NPG Asia Materials** (2013-2015, IF 9.0)

Editorial Board Member – **Ionics** (IF 1.7)

Guest Editor – First focused issue for **Journal of the Electrochemical Society (JES)** on "Intercalation Compounds" (co-editor, Stanley Whittingham) **MRS Bulletin** on "Frontier of in situ TEM" (co-editor, Yimei Zhu and Haimeng Zheng)

Scientific Advisory Board Member for Pacific Northwestern National Lab EMSL (2014-2015)

Treasurer for Battery Division of the Electrochemical Society, USA, 2014-now

Founding Faculty Advisor – ECS Student Chapter, UCSD, 2014 – present (<http://www.ucsdecs.org>)

Member-at-large for Battery Division of the Electrochemical Society, USA, 2010-2012

Treasurer and Executive Committee member for Battery Division of the Electrochemical Society, USA, 2014- now

f. Collaborators from Other Institutions

An, Ke (Oak Ridge National Lab) Chi, Miaofang (Oak Ridge National Laboratory) Cohen, Seth (University of California San Diego), Dompablo, Elena (University of Madrid, Spain) Dudney, Nancy (Oak Ridge National Laboratory) Graetz, Jason (HRL Laboratory) Grey, Clare (Cambridge University UK) Hwang, Bing-Joe (National Taiwan University of Sci & Tech Technology), Jones, Jacob (North Carolina State University), Khalifah, Peter (SUNY Stony Brook and Brookhaven National Laboratory) Li, Quan (Chinese University of Hong Kong) Lu, Li (National University of Singapore) Persson, Kristin (Lawrence Berkeley National Laboratory) Powers, Kevin (University of Florida) Sathrum, Aaron (General Atomics, USA) Shao-Horn, Yang (Massachusetts Institute of Technology) Van der Ven, Anton (University of California Santa Barbara) Veith, Gabriel (Oak Ridge National Laboratory) Wang, Feng (Brookhaven National Laboratory) Xia, Hui (Nanjing University of Science and Technology, China) Yang, Yong (Xiamen University, China) Zheng, Haimei (Lawrence Berkeley National Laboratory), Zhu, Yimei (Brookhaven National Laboratory)

g. Mentoring and Advising

Ph.D. Advisors: Yi Li National University of Singapore and Gerbrand Ceder Massachusetts Institute of Technology

Postdoc Advisor: Gerbrand Ceder Massachusetts Institute of Technology

Graduate Students (20): Yangyuchen Yang, Thomas Wayne, Dan Davis, Chengcheng Fang (Ms.), Christopher Kompella, Hyeseung Chung (Ms.), Han Nguyen, Ziyang Wang, Jae Wook Shin, Haodong

Curriculum Vitae

Y. Shirley Meng

Liu, Chloe Yoon (Ms.), Chuze Ma, Minghao Zhang, Judith Alvarado (Ms.), Shen Wang, Joon Kyo Seo, Jungwoo Lee (Ms), Pritesh Parikh, Erik Wu, Hongjie Hu and Postdocs (4): Dr. Michael Verde, Dr. Mahsa Sina (Ms.), Dr. Xuefeng Wang and Dr. Cyrus Rustomji

Previous graduate students (PhD: 7): Dr. Christopher Fell (Staff Scientist at Tesla), Dr. Bo Xu (Postdoc at UF), Dr. Jing Xu (Postdoc at LBNL), Dr. Daniel Lee (Project leader, Samsung SDI Korea), Dr. Hyuman Cho (Staff researcher, LG Chem Korea), Dr. Andrew Ulvestad (Director's postdoc fellow at APS), Dr. Danna Qian (Scientist, NanoLab, USA)

Previous postdocs: Dr. Dan Gostovic (Hewlett Packard), Dr. Yoyo Hinuma (Kyoto University), Dr. Kyler Carroll (Wildcat Technologies) Dr. Dhamodaran Santhanagopalan (Amrita Centre for Nanoscience in India), Dr. Young-Sang Yu (ALS/LBNL) Dr. Tom Yersak (GM), Dr. Sunn Hy (Tesla)