

Biographical Sketch

Dr. Ying Shirley Meng

Education/Training:

Institution and Location	Degree	Year(s)	Field of Study
Nanyang Technological University Singapore-MIT Alliance	B.A.Sc	1996 – 2000	Matl. Eng. (1 st Honor)
Massachusetts Institute of Technology	Ph.D.	2000 – 2005	Matl. Sci. & Eng.
	Postdoc	2005 – 2007	Matl. Sci. & Eng.

Research and Professional Experience:

2009 – present	Assistant Professor, Nano Engineering, U.C. San Diego
2008 – 2009	Assistant Professor, Materials Science and Engineering, University of Florida
2007 – 2008	Research Scientist, Materials Science and Engineering, MIT

Selected Publications: *10 publications most closely related to the proposed project (50 Total).*

1. 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**, Online ASAP, 2013
2. D. Qian, Y. Hinuma, H. Chen, L-S Du, K. Carroll, G. Ceder, C. P. Grey, Y. S. Meng, "Electronic spin transition in nanosize stoichiometric lithium cobalt oxide", **Journal of the American Chemical Society**, 134(14), 6096, 2012.
3. Y. S. Meng, T. McGilvray, M-C. Yang, D. Gostovic, F. Wang, D. Zeng, Y. Zhu and J. Graetz, "In Situ analytical electron microscopy for probing nanoscale electrochemistry", **Interface**, 20(3), 2011. (**Invited Feature Article**)
4. 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, 2011.
5. Y.S. Meng and M. E. Arroyo-de Dompablo, (invited review), "First principles computational materials design for energy storage materials in lithium ion batteries", **Energy Environ. Sci.**, 2, 589, 2009.
6. W. W. Pai, S. H. Huang, Y. S. Meng, Y. C. Chao, C. H. Lin, H. L. Liu, F.C. Chou, "Sodium Trimer Ordering on Na_xCoO₂ Surface", **Physical Review Letters**, 100 206404, 2008.
7. Y.S. Meng, Y. Hinuma and G. Ceder, "An Investigation of Sodium Patterning in Na_xCoO₂ (0.5 ≤ x ≤ 1) by DFT Methods", **Journal of Chemical Physics**, 128, 104708, 2008.
8. J. Breger, Y.S. Meng, Y. Hinuma, S. Kumar, Y. Shao-Horn, G. Ceder and C.P. Grey, "The effect of high voltages on the structure and electrochemistry of LiNi_{0.5}Mn_{0.5}O₂: a joint experimental and theoretical study", **Chemistry of Materials**, 18, 4768, 2006.
9. K. Kang, Y.S. Meng, J. Breger, C.P. Grey and G. Ceder, "Electrodes with high power and high capacity for rechargeable lithium batteries", **Science**, 311, 977, 2006.
10. Y. S. Meng, G. Ceder, C. P. Grey, W.-S. Yoon, and Y. Shao-Horn, "Understanding the crystal structure of layered LiNi_{0.5}Mn_{0.5}O₂ by electron diffraction and powder diffraction simulation", **Electrochemical and Solid-State Letters** 7(6) A155, 2004

Synergistic Activities:

Associate Editor: NPG-Asia Materials, Ionics and Journal of the Electrochemical Society

Regular reviewer for Chemistry of Materials, Journal of Power Sources, Journal of the Electrochemical Society, Electrochemical and Solid-State Letters, Nano Letters, ACS Nano, Advanced Energy Materials, JACS, Nature Chemistry and Energy and Environmental Sciences.

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

Organizer – Advances in Batteries, American Chemical Society (ACS) Fall Meeting, Philadelphia, August 23-24th, 2012.

Intercalation Compounds Symposium B4, Electrochemical Society (ECS) Fall meeting, Honolulu, October, 2012.

Functional Ceramics for Energy Storage & Conversion for the Electronic Materials and Applications (EMA) 2011 Conference, Orlando January 19-21, 2011.

International Lecture Series on Materials Design and Development for Energy Storage and Conversion, Taipei May15-18, 2006

Collaborators and Co-editors (during the preceding 48 months):

Dr. Arroyo, Elena (University of Madrid, Spain), Dr. Chi, Miaofang and Dr. Dudney, Nancy (Oak Ridge National Laboratory, USA), Dr. Grey, Clare (Cambridge University, UK), Dr. Hwang, Bing-Joe (National Taiwan University of Science and Technology), Dr. Jones, Jacob (University of Florida, USA), Dr. Lu, Li (National University of Singapore), Dr. Persson, Kristin (Berkeley National Laboratory, USA), Dr. Schreiber, Daniel (Pacific Northwestern National Laboratory, USA), Dr. Shao-Horn Yang (Massachusetts Institute of Technology, USA), Dr. Veith, Gabriel (Oak Ridge National Laboratory, USA), Dr. Whittingham, Stanley (State University of New York, Binghamton, USA), Dr. Wang, Feng and Dr. Yang, Xiaoqing (Brookhaven National Laboratory), Dr. Carpenter, Everett (Virginia Commonwealth University), Dr. Khalifah, Peter (State University of New York, Stony Brook)

Graduate and Postdoctoral Advisors and Advisees:

Ph.D. Advisors: Yi Li National University of Singapore

Gerbrand Ceder Massachusetts Institute of Technology

Postdoc Advisor: Gerbrand Ceder Massachusetts Institute of Technology

Graduate Students Assistants:

Dae Hoe Lee, Michael Verde, Hyungman Cho, Danna Qian (Ms.), Jing Xu (Ms.), Ziyang Wang, Jae Wook Shin, Haodong Liu, Chloe Yoon (Ms.), Chuze Ma, Minghao Zhang and Aoran Xu, Chang Liu (Ms.).

Postdoctoral Assistants: Dr. Dhamodaran Santhanagopalan and Dr. Ming-Che Yang

Assistant Project Scientist: Dr. Kyler Carroll

Previous graduate students: Y. Wang (M.S.) (Ph.D. candidate at St. Andrews, Scotland), Thomas McGilvray (M.S.) (Lecturer at Fusion College), C. Fell (Ph.D.) (Staff Scientist at Johnson Control R&D), Bo Xu (Ph.D.) (Postdoc at MIT), M-C. Yang (Ph.D.)

Previous postdocs: Dr. D. Gostovic (Hewlett Packard), Dr. Y. Hinuma (Kyoto University)

Awards and Honors

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.

2008, Early Career Faculty Travel Award (The Electrochemical Society)