Abridged Curriculum Vitae: SUSANNAH L. SCOTT

Duncan and Suzanne Mellichamp Chair in Sustainable Catalytic Processing
Distinguished Professor of Chemical Engineering; and of Chemistry & Biochemistry
Executive Editor, *ACS Catalysis*; Board of Reviewing Editors, *Science*
University of California, Santa Barbara, CA 93106-5080, USA
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Areas of Expertise

- Design of new heterogeneous catalysts for polymerization, metathesis and oxidation;
- Applications of surface organometallic chemistry to active site characterization and thin film fabrication;
- Inorganic reaction kinetics and mechanisms, especially related to the activation of small molecules;
- Development and application of spectroscopic methods, particularly infrared, NMR and X-ray absorption spectroscopies, to the study of interfacial reactions;
- Sustainable catalysis and routes to renewable energy, fuels and chemicals.

Education

YEAR	DEGREE	DISCIPLINE	INSTITUTION
1987-1991	Ph.D.	Inorganic Chemistry	Iowa State University of Science and Technology
1984-1987	B.Sc.	Chemistry	University of Alberta

Academic or Professional Appointments

YEAR	TITLE	INSTITUTION
2020-2024	Chair, Academic Senate	University of California, Santa Barbara
2018-2021	Chang Jiang International Visiting Professor	Dalian University of Technology
2014-present	Duncan & Suzanne Mellichamp Academic Initiative Professor	University of California, Santa Barbara
2014-present	Distinguished Professor	University of California, Santa Barbara
2003-present	Professor of Chemical Engineering	University of California, Santa Barbara, USA
2003-present	Professor of Chemistry & Biochemistry	University of California, Santa Barbara, USA
1998-2002	Associate Professor of Chemistry	University of Ottawa, Canada
1994-1998	Assistant Professor of Chemistry	University of Ottawa, Canada
1992-1994	NATO Postdoctoral Fellow	Institut de recherches sur la catalyse, Lyon, France
1992	Postdoctoral Fellow	Ames Laboratory, Ames IA, USA

Awards and Honors:

1987	Gold Medal in Chemistry, University of Alberta
1987-1991	1967 Centennial Post-graduate Scholarship, NSERC
1989	Teaching Excellence Award, Iowa State University
1991	Research Excellence Award, Iowa State University
1992-1994	NATO Postdoctoral Fellowship
1994	John Charles Polanyi Prize in Chemistry
1994-1999	NSERC Women's Faculty Award
1997	Cottrell Scholar of Research Corporation
1998, 1999	Union Carbide Innovation Recognition Award
1999	University of Ottawa Young Researcher of the Year Award
1999	Premier's Research Excellence Award (Ontario)
2000	YWCA Women of Distinction Award (Information Technology and Science)
2001-2002	Canada Research Chair (Tier II) in Surface Organometallic Catalyst Design
2001	Miller Visiting Research Professorship, University of California – Berkeley
2008	Elected Fellow of the American Association for the Advancement of Science
2012	Visiting Professorship for Senior International Scientists, Chinese Academy of Sciences
2013	Mike and Jean Steffenson Lecturer, Iowa State University
2016	Visiting International Professorship, Université de Lille 1 – Sciences et Technologies
2017	Vladimir N. Ipatieff Lectureship in Catalysis, Northwestern University
2017	Grace Hopper Distinguished Lecturer, University of Pennsylvania

2018	John van Geuns Lecturer, University of Amsterdam
2019	Kurt Wohl Memorial Lecturer, University of Delaware
2019	Boulder Scientific Lecturer, Colorado State University
2019	Eastman Lecturer, University of California, Berkeley
2022	Chair, Gordon Research Conference on Catalysis
2023	Irving Wender Award, Pittsburgh-Cleveland Catalysis Society
2023	Peiyang Lectureship, Tianjin University
2023	Elected Fellow of the Royal Society of Chemistry
2024	Xingda Lectureship, Beijing University
2024	Eastman Chemical Company Distinguished Lectureship, UNC Chapel Hill

Current Advisory Boards: Science Advisory Board, SUNCAT Center for Interface Science and Catalysis, Stanford University; International Scientific Advisory Committee, Stanford Synchrotron Radiation Lightsource; Bioenergy Technical Review Panel, National Renewable Energy Lab; Technical Advisory Board, DOE BOTTLE (Bio-optimized Technologies to keep Thermoplastics out of Landfills and the Environment) Consortium; Editorial Advisory Boards for *Reaction Kinetics, Mechanisms and Catalysis*; *Reaction Chemistry & Engineering; The Innovation; Green Chemistry; Journal of Catalysis; Catalysis Reviews.*

Recent Peer-Reviewed Publications (of approx. 200)**:**

Catalytic Hydrogenolysis by Atomically-Dispersed Iron Sites Embedded in Chemically and Redox Non-Innocent N-Doped Carbon, Z. Luo, L. Li, V.T. Nguyen, U. Kanbur, Y. Li, J. Zhang, R. Nie, A. Biswas, S. Bud'ko, J.-S. Oh, L. Zhou, W. Huang, A. Sadow, B. Wang, S.L. Scott, L. Qi, *J. Am. Chem. Soc.* **2024**, *146*, 8618–8629.

Bifunctional tandem catalytic upcycling of polyethylene to surfactant-range alkylaromatics. J. Sun, Y.H. Lee, R.D. Yappert, A.M. LaPointe, G.W. Coates, B. Peters, M.M. Abu-Omar, S.L. Scott, *Chem* **2023**, *9*, 2318-2336.

Solvent effects on catalytic activity and selectivity in amine-catalyzed D-fructose isomerization. P. Drabo, M. Fischer, M. Emondts, J. Hamm, M. Engelke, M. Simonis, L. Qi, S.L. Scott, R. Palkovits, I. Delidovich, *J. Catal.* **2023**, *418*, 13-21.

Chemical Recycling of Polyethylene by Tandem Catalytic Conversion to Propylene. N.M. Wang, G. Strong, V. DaSilva, L. Gao, R. Huacuja, I.A. Konstantinov, M.S. Rosen, A.J. Nett, S. Ewart, R. Geyer, S.L. Scott, D. Guironnet, *J. Am. Chem. Soc.* **2022**, *144*, 18526-18531

Evidence for entropically-controlled interfacial hydration in mesoporous organosilicas. H. Moon, R. Collanton, J. Monroe, T. Casey, M.S. Shell, S. Han, S.L. Scott, *J. Am. Chem. Soc.* **2022**, *144*, 1766-1777.

High-field NMR, reactivity, and DFT modeling reveal the γ-Al_2O_3 surface hydroxyl network, N. Merle, T. Tabassum, S. L. Scott, A. Motta, K. Szeto, M. Taoufik, R.M. Gauvin, L. Delevoye, *Angew. Chem. Int. Ed.* **2022**, *61*, e202207316.

P-Site Structural Diversity and Evolution in a Zeosil Catalyst, S.K. Jain, T. Tabassum, L. Li, L. Ren, W. Fan, M. Tsapatsis, S. Caratzoulas, S. Han, S.L. Scott, *J. Am. Chem. Soc.* **2021**, *143*, 1968-1983.

Degradation Rates of Plastics in the Environment. A. Chamas, H. Moon, J. Zheng, Y. Qiu, T. Tabassum, J.H. Jang, M.M. Abu-Omar, S.L. Scott, S. Suh, *ACS Sustainable Chem. Eng.* **2020**, *8*, 3494-351.

Polyethylene Upcycling to Long-chain Alkylaromatics by Tandem Hydrogenolysis/Aromatization. F. Zhang, M. Zeng, R. D. Yappert, J. Sun, Y.-H. Lee, A.M. Lapointe, B. Peters, M.M. Abu-Omar, S.L. Scott, *Science*, **2020**, *370*, 437-441.

Phosphonate-Modified UiO-66 Brønsted Acid Catalyst and Its Use in Dehydra-Decyclization of 2-Methyltetrahydrofuran to Pentadienes. M. Dorneles de Mello, G. Kumar, T. Tabassum, S.K. Jain, T.-H. Chen, S. Caratzoulas, X. Li, D. G. Vlachos, S.-I. Han, S.L. Scott, P. Dauenhauer, M. Tsapatsis. *Angew. Chem. Int. Ed.* **2020**, *59*, 13260-13266.

Tuning Molecular Adsorption in SBA-15-Type Periodic Mesoporous Organosilicas by Systematic Variation of their Surface Polarity. H. Moon, S. Han, S.L. Scott. *Chem. Sci.,* **2020**, *11*, 3702-3712.

Unraveling the Dynamic Network in the Reactions of an Alkyl Aryl Ether Catalyzed by Ni/γ-Al_2O_3 in 2-Propanol. L. Qi, A. Chamas, Z. Jones, E. Walter, D. Hoyt, N. Washton, S.L. Scott. *J. Am. Chem. Soc.* **2019**, *141*, 17370-17381.

Upcycling Single-Use Polyethylene into High-Quality Liquid Products. G. Celik, R.M. Kennedy, R.A. Hackler, M. Ferrandon, A. Tennakoon, S. Patnaik, A.M. Lapointe, S.C. Ammal, A. Heyden, F.A. Perras, M. Pruski, S.L. Scott, K.R. Poeppelmeier, A.D. Sadow, M. Delferro *ACS Central Sci.* **2019**, *5*, 1795-1803.

Direct, Selective Production of Aromatic Alcohols from Ethanol Using a Tailored Bifunctional Cobalt-Hydroxyapatite Catalyst. Q.-N. Wang, X.-F. Weng, B.-C. Zhou, S.-P. Lv, S. Miao, D. Zhang, Y. Han, S.L. Scott, F. Schüth, A.-H. Lu. *ACS Catal.* **2019**, *9*, 7204-7216.

Enhanced Metathesis Activity and Stability of Methyltrioxorhenium on a Mostly Amorphous Alumina: Role of the Local Grafting Environment. F. Zhang, K. C. Szeto, M. Taoufik, L. Delevoye, R.M. Gauvin, S.L. Scott. *J. Am. Chem. Soc.* **2018**, *140*, 13854-13868.

An Organometallic Cu_{20} Nanocluster: Synthesis, Characterization, Immobilization on Silica, and "Click" Chemistry. A.W. Cook, Z. Jones, G. Wu, S.L. Scott, T.W. Hayton. *J. Am. Chem. Soc.* **2018***, 140*, 394-400.

A Strong Support Effect in Selective Propane Dehydrogenation Catalyzed by $Ga(i\text{-}Bu)_3$ Grafted onto Silica and γ-Alumina. K.C. Szeto, N. Merle, C. Rios, A. Gallo, Z.R. Jones, L. Delevoye, R.M. Gauvin, S.L. Scott, M. Taoufik. *ACS Catal.* **2018**, *8*, 7566-7577.

Recent Technical Editorials (all written by S.L. Scott)

To Err is Human: to Reproduce Takes Time. C.M. Crudden, P. Fornasiero, T.B. Gunnoe, S.L. Scott *ACS Catal.* **2022**, *12*, 3644-3650.

Nano-apples and Orange-zymes. S.L. Scott, H. Zhao, A. Dey, T.B. Gunnoe *ACS Catal.* **2020**, *10*, 14315-14317.

Most plastic recycling produces low-value materials – but we've found a way to turn a common plastic into high-value molecules. S.L. Scott *The Conversation*. Oct. 23, 2020.

The Burden of Disproof. S.L. Scott, *ACS Catal.* **2019**, *9*, 4706-4708.

A Matter of Life(time) and Death. S.L. Scott, *ACS Catal.* **2018**, *8*, 8597-8599.

Superlative Scientific Writing. S.L. Scott, C.W. Jones, *ACS Catal.* **2017**, *7*, 2218-2219.

Recent plenary/keynote lectures

07/22/24	**Plenary Lecture**, A Circular Economy for the Chemical Sector', UKRI Interdisciplinary Center for Circular Chemical Economy in collaboration with Cell Press, Cardiff University, Wales
07/15/24	**Keynote lecture**, International Congress on Catalysis, Lyon, France "Tandem catalytic upcycling of polyolefins: From monomers to value-added molecules"
12/11/23	**Royal Society Discussion**, "Green carbon for the future of the chemical industry", London England "Imagining a chemical industry based on renewable and recycled carbon"
08/07/23	**Distinguished Lectureship**, Virginia Clean Energy and Catalysis Summit "Imagining a chemical industry based on renewable and recycled carbon"
06/05/23	**Plenary Lecture,** Physikalische Chemie der Energiewende (Physical Chemistry of the Energy Transition), Bunsen-Tagung 2023, Deutsche Bunsen-Gesellschaft für Physikalische Chemie, Berlin Germany "Probing the structure and reactions of molecules at catalytic solid-liquid interfaces using magic-angle-spinning NMR"
10/24/22	**Keynote Lecture**, Innovations in Catalysis to Address Modern Challenges, Chemical Sciences Roundtable (National Academies), Washington, DC "Catalysis Research to Enable a More Sustainable Chemical Enterprise"
05/20/22	**Plenary Lecture**, International Symposium on Green Chemistry (ISGC), La Rochelle, France "Valorization of polyolefins via catalytic upcycling"
05/10/22	**Keynote Lecture,** Fuel Science: From Production to Propulsion, 10th International Conference on Fuel Science, Eurogress, Aachen, Germany "Directing catalytic reactions at solid-liquid interfaces of biomass-derived molecules using solvent effects and surface modification"
12/14/20	**Plenary Lecture**, Changing the World through Sustainable Technologies: a Vision for 2050, Annual Winter Showcase, EPSRC Centre for Doctoral Training in Sustainable Chemical Technologies, University of Bath, England "Motivating recovery by reuse of polyolefins" (virtual)

Featured video: A Plastic Recycling Breakthrough. Research in 60 seconds, UC Santa Barbara. https://www.ucsb.edu/research/research-in-60-seconds