Stanford



Stacey Bent

Jagdeep & Roshni Singh Professor in the School of Eng, Professor of Energy Science and Eng, Senior Fellow at Precourt & Prof, by courtesy, of Electrical Eng, Materials Sci Eng & Chemistry

Chemical Engineering

Bio

BIO

The research in the Bent laboratory is focused on understanding and controlling surface and interfacial chemistry and applying this knowledge to a range of problems in semiconductor processing, micro- and nano-electronics, nanotechnology, and sustainable and renewable energy. Much of the research aims to develop a molecular-level understanding in these systems, and hence the group uses of a variety of molecular probes. Systems currently under study in the group include functionalization of semiconductor surfaces, mechanisms and control of atomic layer deposition, molecular layer deposition, nanoscale materials for light absorption, interface engineering in photovoltaics, catalyst and electrocatalyst deposition.

ACADEMIC APPOINTMENTS

- Professor, Chemical Engineering
- Professor, Energy Science & Engineering
- Senior Fellow, Precourt Institute for Energy
- Professor (By courtesy), Chemistry
- Professor (By courtesy), Materials Science and Engineering
- Professor (By courtesy), Electrical Engineering
- Member, Bio-X
- Senior Fellow, Precourt Institute for Energy
- Director, The TomKat Center for Sustainable Energy
- Affiliate, Stanford Woods Institute for the Environment

HONORS AND AWARDS

- ALD (Atomic Layer Deposition) 2021 Innovator Award, American Vacuum Society (2021)
- Braskem Award for Excellence in Materials Engineering and Science, American Institute of Chemical Engineers (2021)
- Member, National Academy of Engineering (2020)
- SRC Technical Excellence Award, Semiconductor Research Corporation (2020)
- ACS Award in Surface Chemistry, American Chemical Society (2018)
- Bert and Candace Forbes University Fellow in Undergraduate Education, Stanford University (2013)
- Fellow, American Chemical Society (2013)
- Stanford Medal for Faculty Excellence Fostering Undergraduate Research, Stanford University (2013)
- Jagdeep and Roshni Singh Chair, School of Engineering (2012)

- Fellow, World Technology Network (2011)
- Award for Excellence in Undergraduate Teaching, Tau Beta Pi (2006)
- Fellow, AVS (2006)
- Coblentz Award, The Coblentz Society (2001)
- Peter Mark Memorial Award, American Vacuum Society (2000)
- Camille Dreyfus Teacher-Scholar, The Camille Dreyfus Teacher-Scholar Awards Program (1998)
- Research Corporation Cottrell Scholar, Research Corporation (1998)
- Terman Faculty Fellow, Stanford University (1998)
- Beckman Young Investigator, Arnold and Mabel Beckman Foundation (1997)
- CAREER Award, National Science Foundation (1995)

PROGRAM AFFILIATIONS

- Stanford SystemX Alliance

PROFESSIONAL EDUCATION

- PhD, Stanford University , Chemistry (1992)
- BS, U.C. Berkeley , Chemical Engineering (1987)

LINKS

- http://bentgroup.stanford.edu: http://bentgroup.stanford.edu

Teaching

COURSES

2025-26

- Structure and Reactivity of Solid Surfaces: CHEMENG 424, ENERGY 424 (Spr)

2023-24

- Colloquium: CHEMENG 699 (Aut, Win, Spr)
- Graduate Practical Training: CHEMENG 299 (Sum)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Chi Cao

Postdoctoral Faculty Sponsor

Jeongmin Lee, . Ramzan, Madina Telkhozhayeva, Summal Zoha

Doctoral Dissertation Advisor (AC)

Lilliana Brandao, Dea Fackovic Volcanjk, Nadine Humphrey, Anna Kolln, Bang Nhan, Ololade Oriowo, Karl Persson, Kenzie Sanroman Gutierrez, Long Than

Doctoral (Program)

Bryce De Muth

Postdoctoral Research Mentor

Tzu-Ling Liu

Publications

PUBLICATIONS

- **Engineering the Current Collector Interface by Atomic Layer Deposition for Fast Charging of Lithium Metal Batteries** *ACS APPLIED ENERGY MATERIALS*
  Gutierrez, K., Shuchi, S., Oyakhire, S. T., Holoubek, J., Cui, Y., Bent, S. F.
  2026; 9 (15): 9875-9885

- **Tuning Aluminum Precursors for Area-Selective Infiltration into Polymers for High-Precision Pattern Transfer.** *ACS applied materials & interfaces*
  Harake, M., Lee, Y., Yu, B., D'Acunto, G., Dhuey, S., Ruiz, R., Bent, S. F.
  2026

- **Conductive lithiophilic interface layer enables faceted crystalline lithium seeds** *JOURNAL OF MATERIALS CHEMISTRY A*
  Shuchi, S., Sanroman Gutierrez, K. M., Shearer, A. B., Cho, Y., D'Acunto, G., Zhang, E., Lee, J., Humphrey, N., Cui, Y., Bent, S. F.
  2026

- **Aromatic organic-tin hybrid films as electron beam resists** *APPLIED SURFACE SCIENCE*
  Lewis, J., Than, L., Bent, S. F.
  2026; 732

- **SEI Characterization Using XPS: Resolving Rinsing Effects through Cryogenic Implementation.** *ACS applied materials & interfaces*
  Shuchi, S. B., D'Acunto, G., Gutierrez, K. M., Sayavong, P., Oyakhire, S. T., Jamtgaard, J., Cui, Y., Bent, S. F.
  2026

- **Tailored Rh-Al₂O₃-ZrO₂ Interfaces: Insights into Rh Aluminate Formation and Enhanced Stability** *CHEMISTRY OF MATERIALS*
  Liccardo, G., Nhan, B. T., Chung, P., Hutton, D., D'Acunto, G., Mandal, S. C., Smith, J., Richardson, S., Chi, M., Abild-Pedersen, F., Bent, S. F., Cargnello, M.
  2026

- **Illuminating the Challenges in Extreme Ultraviolet Patterning Materials** *CHEMISTRY OF MATERIALS*
  Naulleau, P., Bent, S. F., Blau, S. M., Helms, B. A., Houle, F. A., Kostko, O., Lee, K., Nealey, P. F., Ober, C. K., Oh, D., Segalman, R. A., Vargo, E., Wang, et al
  2026

- **Atomic layer-deposited nucleation layers to control zinc morphology and suppress hydrogen evolution.** *Proceedings of the National Academy of Sciences of the United States of America*
  Ravi, A., Shuchi, S. B., Feng, G., Li, Y., Zhang, P., Li, J., Liu, T. L., D'Acunto, G., Cai, A., Li, T., Sanroman Gutierrez, K. M., Liu, Z., Wang, et al
  2026; 123 (22): e2533390123

- **A Dual-Si Atomic Precursor Enabling High-Quality SiN_x Thin Films via Very High-Frequency Plasma Atomic Layer Deposition** *CHEMISTRY OF MATERIALS*
  Lim, Y., Lee, Y., Dinh, K., Rhee, M., Kim, Y., Trinh, N., Gu, B., Kang, Y., Jeong, J., Lee, H., Bent, S. F., Oh, I.
  2026

- **Ternary and Quaternary Nickel-Iron-Oxide-Based Thin Films as Oxygen Evolution Reaction Catalysts in Alkaline Media** *ACS CATALYSIS*
  Schroder, J., D'Acunto, G., Persson, K. A., Aleman, A. M., Ponte, E. L., Bent, S. F., Jaramillo, T. F.
  2026

- **Effect of Oxide Chemistry on Pt Redistribution and Site Exposure in ALD-Coated Catalysts** *ACS CATALYSIS*
  Nhan, B. T., Mandal, S. C., Smith, J., Liccardo, G., Richardson, S., Abild-Pedersen, F., Chi, M., Cargnello, M., Bent, S. F.
  2026

- **Effect of molecular layer deposition parameters on the electron beam resist properties of hafnicone hybrid films** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Lewis, J., Than, L., Bent, S. F.
  2026; 44 (2)

- **Opportunities and Challenges of Machine Learning in Atomic Layer Deposition** *CHEMISTRY OF MATERIALS*
  Westermayr, J., Bent, S. F., Tonner-Zech, R.
  2026
- **Anhydrous Atomic Layer Deposition of HfO2: Mechanistic Analysis of the Tetrakis(dimethylamido)hafnium (TDMAH)-O2 Process.** *Langmuir : the ACS journal of surfaces and colloids*
  Kim, M., Seo, S., Jeon, W. P., Lee, Y., Lee, J., Kim, H., Shong, B., Bent, S. F.
  2025
- **Cryogenic X-ray photoelectron spectroscopy for battery interfaces.** *Nature*
  Shuchi, S. B., D'Acunto, G., Sayavong, P., Oyakhire, S. T., Sanroman Gutierrez, K. M., Risner-Jamtgaard, J., Choi, I. R., Cui, Y., Bent, S. F.
  2025; 646 (8086): 850-855
- **Effect of Networking Density on the Patterning Performance of Molecular Layer Deposited Alucone Electron Beam/EUV Resists.** *ACS applied materials & interfaces*
  Than, L. V., D'Acunto, G., Harake, M., Im, H., Kostko, O., Bent, S. F.
  2025
- **Precursor Engineering of Atomic Layer Deposition for Top-Gate Insulators on Monolayer MoS2 Transistors.** *ACS nano*
  Shearer, A. B., Ko, J. S., Hoang, A. T., Werbrouck, A., Rothman, A., Volcanjk, D. F., Lee, Y. M., Bennett, R. K., Mannix, A. J., Saraswat, K. C., Pop, E., Bent, S. F.
  2025
- **Role of Precursor Miscibility in Area-Selective Atomic Layer Deposition.** *Advanced materials (Deerfield Beach, Fla.)*
  Shearer, A., Cho, Y., Werbrouck, A., Rothman, A., Liu, T. L., Bent, S. F.
  2025: e06699
- **Optoelectronic Properties of Atomic Layer Deposited and Sputtered MoS2 Films.** *ACS applied materials & interfaces*
  Nattoo, C. A., Peña, T., Nassiri Nazif, K., Wu, X., Rahimisheikh, S., D'Acunto, G., Bent, S. F., Hadermann, J., Pop, E.
  2025
- **Atomic layer deposition of nickel sulfide thin films and their thermal and electrochemical stability** *JOURNAL OF MATERIALS CHEMISTRY A*
  Mattinen, M., Schroeder, J., Hatanpaeae, T., Popov, G., Mizohata, K., Leskelae, M., Jaramillo, T. F., Stevens, M., Bent, S. F., Ritala, M.
  2025
- **John Ekerdt - the man, the myth, the legend…** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Bent, S. F., Chang, J. P.
  2025; 43 (4)
- **Revealing and Quantifying Carbon Corrosion in Aqueous Manganese-Based Batteries.** *Nano letters*
  Ravi, A., Zhang, G., Holoubek, J., Li, Y., Hao, H., Cai, A., Shuchi, S. B., Feng, G., Han, J., Li, J., Bent, S. F., Zheng, X., Cui, et al
  2025
- **Galvanic corrosion underlies coulombic efficiency differences in high-performing lithium metal battery electrolytes** *ENERGY & ENVIRONMENTAL SCIENCE*
  Oyakhire, S. T., Kim, S., Zhang, W., Shuchi, S., Cui, Y., Bent, S. F.
  2025
- **Crystalline 1D Coordination Polymer Inhibitor Layer Leads to Vertical Sidewalls in Selectively Deposited ZnO on Nanoscale Patterns.** *ACS nano*
  Shearer, A., Cho, Y., Kim, M., Werbrouck, A., Liu, T. L., Takacs, C. J., Shong, B., Bent, S. F.
  2025
- **Atomic and molecular layer deposition on unconventional substrates: challenges and perspectives from energy applications.** *Nanotechnology*
  Cho, Y., D'Acunto, G., Nanda, J., Bent, S. F.
  2025
- **Achieving 1-nm-Scale Equivalent Oxide Thickness Top-Gate Dielectric on Monolayer Transition Metal Dichalcogenide Transistors With CMOS-Friendly Approaches** *IEEE TRANSACTIONS ON ELECTRON DEVICES*
  Ko, J., Shearer, A. B., Lee, S., Neilson, K., Jaikissoon, M., Kim, K., Bent, S. F., Pop, E., Saraswat, K. C.

2025; 72 (3): 1514-1519

- **Molecular Design in Area-Selective Atomic Layer Deposition: Understanding Inhibitors and Precursors** *CHEMISTRY OF MATERIALS*
  Lee, Y., Rothman, A., Shearer, A. B., Bent, S. F.
  2025
- **Deposition and Degradation Mechanism of Zinc Thiolate Thin Films via Hybrid Molecular Layer Deposition** *CHEMISTRY OF MATERIALS*
  Lewis, J., Shi, J., Werbrouck, A., Bent, S. F.
  2025
- **Enhanced ALD Nucleation on Polymeric Separator for Improved Li-S Batteries.** *ACS applied materials & interfaces*
  D'Acunto, G., Shuchi, S. B., Zheng, X., Than, L. V., Geierstanger, E. M., Harake, M., Cui, A., Werbrouck, A., Mattinen, M., Cui, Y., Bent, S. F.
  2025
- **Nanostructure fabrication by area selective deposition: a brief review.** *Materials horizons*
  Liu, T. L., Bent, S. F.
  2025
- **Exploring the potential landscape of chemical engineering science** *NATURE CHEMICAL ENGINEERING*
  Adjiman, C. S., Angeli, P., Bardow, A., Bent, S. F., Brandon, N., Galloway, K., Gorte, R. J., Guillen-Gosalbez, G., Gutierrez-Antonio, C., Hatzell, M. C., Jewett, M. C., Kanga, M., Kopke, et al
  2025; 2 (1): 19-25
- **Role of Molecular Orientation: Comparison of Nitrogenous Aromatic Small Molecule Inhibitors for Area-Selective Atomic Layer Deposition** *CHEMISTRY OF MATERIALS*
  Shearer, A., Pieck, F., Yarbrough, J., Werbrouck, A., Tonner-Zech, R., Bent, S. F.
  2024
- **Comparison of Al- and Hf-based hybrid photoresists grown by molecular layer deposition for extreme ultraviolet lithography** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Ravi, A., Than, L., Lewis, J., Shi, J., Werbrouck, A., Han, J., Mattinen, M., Bent, S. F.
  2024; 42 (6)
- **Dynamics of precatalyst conversion and iron incorporation in nickel-based alkaline oxygen evolution reaction catalysts** *CELL REPORTS PHYSICAL SCIENCE*
  Mattinen, M., Schroder, J., D'Acunto, G., Ritala, M., Jaramillo, T. F., Stevens, M., Bent, S. F.
  2024; 5 (11)
- **Deconvoluting Effects of Lithium Morphology and SEI Stability at Moderate Current Density Using Interface Engineering** *ADVANCED MATERIALS INTERFACES*
  Shuchi, S., Oyakhire, S. T., Zhang, W., Sayavong, P., Ye, Y., Chen, Y., Yu, Z., Cui, Y., Bent, S. F.
  2024
- **Enhanced nucleation mechanism in ruthenium atomic layer deposition: Exploring surface termination and precursor ligand effects with RuCpEt(CO)₂** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Rothman, A., Seo, S., Woodruff, J., Kim, H., Bent, S. F.
  2024; 42 (5)
- **Unveiling the Stability of Encapsulated Pt Catalysts Using Nanocrystals and Atomic Layer Deposition.** *Journal of the American Chemical Society*
  Liccardo, G., Cendejas, M. C., Mandal, S. C., Stone, M. L., Porter, S., Nhan, B. T., Kumar, A., Smith, J., Plessow, P. N., Cegelski, L., Osio-Norgaard, J., Abild-Pedersen, F., Chi, et al
  2024
- **HfO₂ Area-Selective Atomic Layer Deposition with a Carbon-Free Inhibition Layer** *CHEMISTRY OF MATERIALS*
  Lee, Y., Seo, S., Shearer, A. B., Werbrouck, A., Kim, H., Bent, S. F.
  2024
- **Erratum: "Understanding chemical and physical mechanisms in atomic layer deposition" [J. Chem. Phys. 152, 040902 (2020)].** *The Journal of chemical physics*
  Richey, N. E., de Paula, C., Bent, S. F.

2024; 160 (8)

- **Recovery of isolated lithium through discharged state calendar ageing.** *Nature*
  Zhang, W., Sayavong, P., Xiao, X., Oyakhire, S. T., Shuchi, S. B., Vilá, R. A., Boyle, D. T., Kim, S. C., Kim, M. S., Holmes, S. E., Ye, Y., Li, D., Bent, et al
  2024; 626 (7998): 306-312
- **Enhanced Growth in Atomic Layer Deposition of Ruthenium Metal: The Role of Surface Diffusion and Nucleation Sites** *CHEMISTRY OF MATERIALS*
  Rothman, A., Werbrouck, A., Bent, S. F.
  2023; 36 (1): 541-550
- **Interfacial engineering of lithium metal anodes: what is left to uncover?** *ENERGY ADVANCES*
  Oyakhire, S. T., Bent, S. F.
  2023
- **Area-Selective Deposition by Cyclic Adsorption and Removal of 1-Nitropropane.** *The journal of physical chemistry. A*
  Yarbrough, J., Bent, S. F.
  2023
- **Area-Selective Atomic Layer Deposition for Resistive Random-Access Memory Devices.** *ACS applied materials & interfaces*
  Oh, I. K., Khan, A. I., Qin, S., Lee, Y., Wong, H. P., Pop, E., Bent, S. F.
  2023
- **Proximity Matters: Interfacial Solvation Dictates Solid Electrolyte Interphase Composition.** *Nano letters*
  Oyakhire, S. T., Liao, S., Shuchi, S. B., Kim, M. S., Kim, S. C., Yu, Z., Vila, R. A., Rudnicki, P. E., Cui, Y., Bent, S. F.
  2023
- **Area-Selective Atomic Layer Deposition of Al2O3 with a Methanesulfonic Acid Inhibitor** *CHEMISTRY OF MATERIALS*
  Yarbrough, J., Pieck, F., Shearer, A. B., Maue, P., Tonner-Zech, R., Bent, S. F.
  2023
- **Dissolution of the Solid Electrolyte Interphase and Its Effects on Lithium Metal Anode Cyclability.** *Journal of the American Chemical Society*
  Sayavong, P., Zhang, W., Oyakhire, S. T., Boyle, D. T., Chen, Y., Kim, S. C., Vilá, R. A., Holmes, S. E., Kim, M. S., Bent, S. F., Bao, Z., Cui, Y.
  2023
- **Molecular Layer Deposition of Organic-Inorganic Hafnium Oxynitride Hybrid Films for Electrochemical Applications** *ACS APPLIED ENERGY MATERIALS*
  Ablat, H., Oh, I., Richey, N. E., Oyakhire, S. T., Yang, Y., Zhang, W., Huang, W., Cui, Y., Bent, S. F.
  2023; 6 (11): 5806-5816
- **Data-driven electrolyte design for lithium metal anodes.** *Proceedings of the National Academy of Sciences of the United States of America*
  Kim, S. C., Oyakhire, S. T., Athanitis, C., Wang, J., Zhang, Z., Zhang, W., Boyle, D. T., Kim, M. S., Yu, Z., Gao, X., Sogade, T., Wu, E., Qin, et al
  2023; 120 (10): e2214357120
- **Revealing the Multifunctions of Li3N in the Suspension Electrolyte for Lithium Metal Batteries.** *ACS nano*
  Kim, M. S., Zhang, Z., Wang, J., Oyakhire, S. T., Kim, S. C., Yu, Z., Chen, Y., Boyle, D. T., Ye, Y., Huang, Z., Zhang, W., Xu, R., Sayavong, et al
  2023
- **Correlating the Formation Protocols of Solid Electrolyte Interphases with Practical Performance Metrics in Lithium Metal Batteries** *ACS ENERGY LETTERS*
  Oyakhire, S. T., Zhang, W., Yu, Z., Holmes, S. E., Sayavong, P., Kim, S., Boyle, D. T., Kim, M., Zhang, Z., Cui, Y., Bent, S. F.
  2023: 869-877
- **Molecular layer deposition of an Al-based hybrid resist for electron-beam and EUV lithography**
  Ravi, A., Shi, J., Lewis, J., Bent, S. F.
  edited by Guerrero, D., Amblard, G. R.
  SPIE-INT SOC OPTICAL ENGINEERING.2023
- **Sequential Use of Orthogonal Self-Assembled Monolayers for Area-Selective Atomic Layer Deposition of Dielectric on Metal** *ADVANCED MATERIALS INTERFACES*

Liu, T., Harake, M., Bent, S. F.
2022

- **Ionic Liquid-Mediated Route to Atomic Layer Deposition of Tin(II) Oxide via a C-C Bond Cleavage Ligand Modification Mechanism.** *Journal of the American Chemical Society*
  Shi, J., Seo, S., Schuster, N. J., Kim, H., Bent, S. F.
  2022
- **Surface Fe clusters promote syngas reaction to oxygenates on Rh catalysts modified by atomic layer deposition** *JOURNAL OF CATALYSIS*
  Nathan, S. S., Asundi, A. S., Hoffman, A. S., Hong, J., Zhou, C., Vila, F. D., Cargnello, M., Bare, S. R., Bent, S. F.
  2022; 414: 125-136
- **An X-ray Photoelectron Spectroscopy Primer for Solid Electrolyte Interphase Characterization in Lithium Metal Anodes** *ACS ENERGY LETTERS*
  Oyakhire, S. T., Gong, H., Cui, Y., Bao, Z., Bent, S. F.
  2022; 7 (8)
- **Electrical resistance of the current collector controls lithium morphology.** *Nature communications*
  Oyakhire, S. T., Zhang, W., Shin, A., Xu, R., Boyle, D. T., Yu, Z., Ye, Y., Yang, Y., Raiford, J. A., Huang, W., Schneider, J. R., Cui, Y., Bent, et al
  2022; 13 (1): 3986
- **Understanding and Utilizing Reactive Oxygen Reservoirs in Atomic Layer Deposition of Metal Oxides with Ozone** *CHEMISTRY OF MATERIALS*
  Schneider, J. R., de Paula, C., Richey, N. E., Baker, J. G., Oyakhire, S. T., Bent, S. F.
  2022
- **Elucidating the Reaction Mechanism of Atomic Layer Deposition of Al2O3 with a Series of Al(CH3)xCl3-x and Al(CyH2y+1)3 Precursors.** *Journal of the American Chemical Society*
  Oh, I., Sandoval, T. E., Liu, T., Richey, N. E., Nguyen, C. T., Gu, B., Lee, H., Tonner-Zech, R., Bent, S. F.
  2022
- **Molecular Layer Deposition of a Hafnium-Based Hybrid Thin Film as an Electron Beam Resist.** *ACS applied materials & interfaces*
  Shi, J., Ravi, A., Richey, N. E., Gong, H., Bent, S. F.
  2022
- **Copper Oxidation Improves Dodecanethiol Blocking Ability in Area-Selective Atomic Layer Deposition** *ADVANCED MATERIALS INTERFACES*
  Liu, T., Bent, S. F.
  2022
- **Tuning Molecular Inhibitors and Aluminum Precursors for the AreaSelective Atomic Layer Deposition of Al2O3 br** *CHEMISTRY OF MATERIALS*
  Yarbrough, J., Pieck, F., Grigjanis, D., Oh, I., Maue, P., Tonner-Zech, R., Bent, S. F.
  2022; 34 (10): 4646-4659
- **Methyl-methacrylate based aluminum hybrid film grown via three-precursor molecular layer deposition** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Oyakhire, S. T., Ablat, H., Richey, N. E., Bent, S. F.
  2022; 40 (2)
- **Steering CO2 hydrogenation toward C-C coupling to hydrocarbons using porous organic polymer/metal interfaces.** *Proceedings of the National Academy of Sciences of the United States of America*
  Zhou, C., Asundi, A. S., Goodman, E. D., Hong, J., Werghi, B., Hoffman, A. S., Nathan, S. S., Bent, S. F., Bare, S. R., Cargnello, M.
  2022; 119 (7)
- **Suspension electrolyte with modified Li+ solvation environment for lithium metal batteries.** *Nature materials*
  Kim, M. S., Zhang, Z., Rudnicki, P. E., Yu, Z., Wang, J., Wang, H., Oyakhire, S. T., Chen, Y., Kim, S. C., Zhang, W., Boyle, D. T., Kong, X., Xu, et al
  1800
- **Rational solvent molecule tuning for high-performance lithium metal battery electrolytes** *NATURE ENERGY*
  Yu, Z., Rudnicki, P. E., Zhang, Z., Huang, Z., Celik, H., Oyakhire, S. T., Chen, Y., Kong, X., Kim, S., Xiao, X., Wang, H., Zheng, Y., Kamat, et al

2022

- **The Importance of Decarbonylation Mechanisms in the Atomic Layer Deposition of High-Quality Ru Films by Zero-Oxidation State Ru(DMBD)(CO)3.** *Small (Weinheim an der Bergstrasse, Germany)*
  Schneider, J. R., de Paula, C., Lewis, J., Woodruff, J., Raiford, J. A., Bent, S. F.
  1800: e2105513
- **Modulating the optoelectronic properties of hybrid Mo-thiolate thin films** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Shi, J., Zeng, L., Nikzad, S., Koshy, D. M., Asundi, A. S., MacIsaac, C., Bent, S. F.
  2022; 40 (1)
- **Identifying higher oxygenate synthesis sites in Cu catalysts promoted and stabilized by atomic layer deposited Fe2O3** *JOURNAL OF CATALYSIS*
  Asundi, A. S., Nathan, S. S., Hong, J., Hoffman, A. S., Pennel, M., Bare, S. R., Bent, S. F.
  2021; 404: 210-223
- **Tailoring the Surface of Metal Halide Perovskites to Enable the Atomic Layer Deposition of Metal Oxide Contacts** *ACS APPLIED ENERGY MATERIALS*
  Raiford, J. A., Chosy, C., Reeves, B. A., Bent, S. F.
  2021; 4 (9): 9871-9880
- **Characterizing Self-Assembled Monolayer Breakdown in Area-Selective Atomic Layer Deposition.** *Langmuir : the ACS journal of surfaces and colloids*
  Liu, T., Zeng, L., Nardi, K. L., Hausmann, D. M., Bent, S. F.
  2021
- **Monolayer Support Control and Precise Colloidal Nanocrystals Demonstrate Metal-Support Interactions in Heterogeneous Catalysts.** *Advanced materials (Deerfield Beach, Fla.)*
  Goodman, E. D., Asundi, A. S., Hoffman, A. S., Bustillo, K. C., Stebbins, J. F., Bare, S. R., Bent, S. F., Cargnello, M.
  2021: e2104533
- **Resilient Women and the Resiliency of Science** *CHEMISTRY OF MATERIALS*
  Khashab, N. M., Skrabalak, S. E., Adler-Abramovich, L., Bent, S. F., El-Mellouhi, F., Kumacheva, E., Milliron, D. J., Neu, J., Rezasoltani, E., Shen, Q., Sicolo, S.
  2021; 33 (17): 6585-6588
- **Role of Precursor Choice on Area-Selective Atomic Layer Deposition** *CHEMISTRY OF MATERIALS*
  Oh, I., Sandoval, T. E., Liu, T., Richey, N. E., Bent, S. F.
  2021; 33 (11): 3926-3935
- **Bridging thermal catalysis and electrocatalysis: Catalyzing CO2 conversion with carbon-based materials.** *Angewandte Chemie (International ed. in English)*
  Koshy, D., Nathan, S., Asundi, A., Abdellah, A., Dull, S., Cullen, D., Higgins, D., Bao, Z., Bent, S., Jaramillo, T.
  2021
- **Multi-metal coordination polymers grown through hybrid molecular layer deposition.** *Dalton transactions (Cambridge, England : 2003)*
  Richey, N. E., Borhan, S., Bent, S. F.
  2021
- **Next generation nanopatterning using small molecule inhibitors for area-selective atomic layer deposition** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Yarbrough, J., Shearer, A. B., Bent, S. F.
  2021; 39 (2)
- **Area-Selective Molecular Layer Deposition of a Silicon Oxycarbide Low-k Dielectric** *CHEMISTRY OF MATERIALS*
  Yu, X., Bobb-Semple, D., Oh, I., Liu, T., Closser, R. G., Trevillyan, W., Bent, S. F.
  2021; 33 (3): 902–9
- **Bridging the Synthesis Gap: Ionic Liquids Enable Solvent-Mediated Reaction in Vapor-Phase Deposition.** *ACS nano*
  Shi, J., Bent, S. F.
  2021

- **Identification of highly active surface iron sites on Ni(OOH) for the oxygen evolution reaction by atomic layer deposition** *JOURNAL OF CATALYSIS*
  Baker, J. G., Schneider, J. R., Paula, C., Mackus, A. J. M., Bent, S. F.
  2021; 394: 476–85
- **Area-Selective Atomic Layer Deposition on Chemically Similar Materials: Achieving Selectivity on Oxide/Oxide Patterns** *CHEMISTRY OF MATERIALS*
  Liu, T., Bent, S. F.
  2021; 33 (2): 513–23
- **Increased selectivity in area-selective ALD by combining nucleation enhancement and SAM-based inhibition** *JOURNAL OF MATERIALS RESEARCH*
  de Paula, C., Bobb-Semple, D., Bent, S. F.
  2021
- **Impurity Control in Catalyst Design: The Role of Sodium in Promoting and Stabilizing Co and Co2C for Syngas Conversion** *CHEMCATCHEM*
  Asundi, A. S., Hoffman, A. S., Nathan, S. S., Boubnov, A., Bare, S. R., Bent, S. F.
  2021
- **Understanding Selectivity in CO2 Hydrogenation to Methanol for MoP Nanoparticle Catalysts Using In Situ Techniques** *CATALYSTS*
  Duyar, M. S., Gallo, A., Regli, S. K., Snider, J. L., Singh, J. A., Valle, E., McEnaney, J., Bent, S. F., Ronning, M., Jaramillo, T. F.
  2021; 11 (1)
- **Understanding Support Effects of ZnO-Promoted Co Catalysts for Syngas Conversion to Alcohols Using Atomic Layer Deposition** *CHEMCATCHEM*
  Nathan, S. S., Asundi, A. S., Singh, J. A., Hoffman, A. S., Boubnov, A., Hong, J., Bare, S. R., Bent, S. F.
  2020
- **Atomic Layer Deposition of Pt on the Surface Deactivated by Fluorocarbon Implantation: Investigation of the Growth Mechanism** *CHEMISTRY OF MATERIALS*
  Kim, W., Shin, K., Shong, B., Godet, L., Bent, S. F.
  2020; 32 (22): 9696–9703
- **Enhanced alcohol production over binary Mo/Co carbide catalysts in syngas conversion** *JOURNAL OF CATALYSIS*
  Asundi, A. S., Hoffman, A. S., Chi, M., Nathan, S. S., Boubnov, A., Hong, J., Bare, S. R., Bent, S. F.
  2020; 391: 446–58
- **Thermally Activated Reactions of Phenol at the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Shong, B., Ansari, A., Bent, S. F.
  2020; 124 (43): 23657–60
- **Revealing and Elucidating ALD-Derived Control of Lithium Plating Microstructure** *ADVANCED ENERGY MATERIALS*
  Oyakhire, S. T., Huang, W., Wang, H., Boyle, D. T., Schneider, J. R., de Paula, C., Wu, Y., Cui, Y., Bent, S. F.
  2020
- **Effect of Heteroaromaticity on Adsorption of Pyrazine on the Ge(100)-2x1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Sandoval, T. E., Pieck, F., Tonner, R., Bent, S. F.
  2020; 124 (40): 22055–68
- **Effect of Multilayer versus Monolayer Dodecanethiol on Selectivity and Pattern Integrity in Area-Selective Atomic Layer Deposition** *ACS APPLIED MATERIALS & INTERFACES*
  Liu, T., Nardi, K. L., Draeger, N., Hausmann, D. M., Bent, S. F.
  2020; 12 (37): 42226–35
- **Overcoming Redox Reactions at Perovskite-Nickel Oxide Interfaces to Boost Voltages in Perovskite Solar Cells** *JOULE*
  Boyd, C. C., Shallcross, R., Moot, T., Kerner, R., Bertoluzzi, L., Onno, A., Kavadiya, S., Chosy, C., Wolf, E. J., Werner, J., Raiford, J. A., de Paula, C., Palmstrom, et al
  2020; 4 (8): 1759–75

- **The Molybdenum Oxide Interface Limits the High-Temperature Operational Stability of Unencapsulated Perovskite Solar Cells** *ACS ENERGY LETTERS*
  Schloemer, T. H., Raiford, J. A., Gehan, T. S., Moot, T., Nanayakkara, S., Harvey, S. P., Bramante, R. C., Dunfield, S., Louks, A. E., Maughan, A. E., Bliss, L., McGehee, M. D., van Hest, et al
  2020; 5 (7): 2349–60
- **Applications of atomic layer deposition and chemical vapor deposition for perovskite solar cells** *ENERGY & ENVIRONMENTAL SCIENCE*
  Raiford, J. A., Oyakhire, S. T., Bent, S. F.
  2020; 13 (7): 1997–2023
- **Selective Toolbox for Nanofabrication** *CHEMISTRY OF MATERIALS*
  Lee, H., Bent, S. F.
  2020; 32 (8): 3323–24
- **The Influence of Ozone: Superstoichiometric Oxygen in Atomic Layer Deposition of Fe2O3 Using tert-Butylferrocene and O-3** *ADVANCED MATERIALS INTERFACES*
  Schneider, J. R., Baker, J. G., Bent, S. F.
  2020
- **Nucleation Effects in the Atomic Layer Deposition of Nickel-Aluminum Oxide Thin Films** *CHEMISTRY OF MATERIALS*
  Baker, J. G., Schneider, J. R., Raiford, J. A., de Paula, C., Bent, S. F.
  2020; 32 (5): 1925–36
- **Understanding chemical and physical mechanisms in atomic layer deposition.** *The Journal of chemical physics*
  Richey, N. E., de Paula, C., Bent, S. F.
  2020; 152 (4): 040902
- **Synthesis of a Hybrid Nanostructure of ZnO-Decorated MoS2 by Atomic Layer Deposition.** *ACS nano*
  Oh, I., Kim, W., Zeng, L., Singh, J., Bae, D., Mackus, A. J., Song, J., Seo, S., Shong, B., Kim, H., Bent, S. F.
  2020
- **Mechanistic Study of Nucleation Enhancement in Atomic Layer Deposition by Pretreatment with Small Organometallic Molecules** *CHEMISTRY OF MATERIALS*
  de Paula, C., Richey, N. E., Zeng, L., Bent, S. F.
  2020; 32 (1): 315–25
- **Surface Energy Change of Atomic-Scale Metal Oxide Thin Films by Phase Transformation.** *ACS nano*
  Oh, I. K., Zeng, L. n., Kim, J. E., Park, J. S., Kim, K. n., Lee, H. n., Seo, S. n., Khan, M. R., Kim, S. n., Park, C. W., Lee, J. n., Shong, B. n., Lee, et al
  2020
- **Modified atomic layer deposition of MoS2 thin films** *Modified atomic layer deposition of MoS2 thin films*
  Zeng, L., Richey, N. E., Palm, D. W., Oh, I., Shi, J., MacIsaac, C., Jaramillo, T., Bent, S. F.
  2020; 38: 060403
- **Substrate-Dependent Study of Chain Orientation and Order in Alkylphosphonic Acid Self-Assembled Monolayers for ALD Blocking.** *Langmuir : the ACS journal of surfaces and colloids*
  Bobb-Semple, D. n., Zeng, L. n., Cordova, I. n., Bergsman, D. S., Nordlund, D. n., Bent, S. F.
  2020
- **Enhanced Nucleation of Atomic Layer Deposited Contacts Improves Operational Stability of Perovskite Solar Cells in Air** *ADVANCED ENERGY MATERIALS*
  Raiford, J. A., Boyd, C. C., Palmstrom, A. F., Wolf, E. J., Fearon, B. A., Berry, J. J., McGehee, M. D., Bent, S. F.
  2019
- **Design of low bandgap tin-lead halide perovskite solar cells to achieve thermal, atmospheric and operational stability** *NATURE ENERGY*
  Prasanna, R., Leijtens, T., Dunfield, S. P., Raiford, J. A., Wolf, E. J., Swifter, S. A., Werner, J., Eperon, G. E., de Paula, C., Palmstrom, A. F., Boyd, C. C., van Hest, M. M., Bent, et al
  2019; 4 (11): 939–47
- **Structurally Stable Manganese Alkoxide Films Grown by Hybrid Molecular Layer Deposition for Electrochemical Applications** *ADVANCED FUNCTIONAL MATERIALS*

Bergsman, D. S., Baker, J. G., Closser, R. G., MacIsaac, C., Lillethorup, M., Strickler, A. L., Azarnouche, L., Godet, L., Bent, S. F.
2019

- **A Versatile Method for Ammonia Detection in a Range of Relevant Electrolytes via Direct Nuclear Magnetic Resonance Techniques** *ACS CATALYSIS*
  Nielander, A. C., McEnaney, J. M., Schwalbe, J. A., Baker, J. G., Blair, S. J., Wang, L., Pelton, J. G., Andersen, S. Z., Enemark-Rasmussen, K., Colic, V., Yang, S., Bent, S. F., Cargnello, et al
  2019; 9 (7): 5797–5802

- **Growth of a Surface-Tethered, All-Carbon Backboned Fluoropolymer by Photoactivated Molecular Layer Deposition** *ACS APPLIED MATERIALS & INTERFACES*
  Closser, R. G., Lillethorup, M., Bergsman, D. S., Bent, S. F.
  2019; 11 (24): 21988–97

- **Atomic layer deposition of vanadium oxide to reduce parasitic absorption and improve stability in n-i-p perovskite solar cells for tandems** *SUSTAINABLE ENERGY & FUELS*
  Raiford, J. A., Belisle, R. A., Bush, K. A., Prasanna, R., Palmstrom, A. F., McGehee, M. D., Bent, S. F.
  2019; 3 (6): 1517–25

- **A rigorous electrochemical ammonia synthesis protocol with quantitative isotope measurements.** *Nature*
  Andersen, S. Z., Colic, V., Yang, S., Schwalbe, J. A., Nielander, A. C., McEnaney, J. M., Enemark-Rasmussen, K., Baker, J. G., Singh, A. R., Rohr, B. A., Statt, M. J., Blair, S. J., Mezzavilla, et al
  2019

- **The Role of Aluminum in Promoting Ni-Fe-OOH Electrocatalysts for the Oxygen Evolution Reaction** *ACS APPLIED ENERGY MATERIALS*
  Baker, J. G., Schneider, J. R., Torres, J., Singh, J. A., Mackus, A. J. M., Bajdich, M., Bent, S. F.
  2019; 2 (5): 3488–99

- **Opportunities for Atomic Layer Deposition in Emerging Energy Technologies** *ACS ENERGY LETTERS*
  Asundi, A. S., Raiford, J. A., Bent, S. F.
  2019; 4 (4): 908–25

- **Quantitative protocol for the electroreduction of N2 to NH3 under ambient conditions**
  Stephens, I., Andersen, S., Colic, V., Yang, S., Schwalbe, J., Nielander, A., McEnaney, J., Enemark-Rasmussen, K., Baker, J., Singh, A., Rohr, B., Blair, S., Mezzavilla, et al
  AMER CHEMICAL SOC.2019

- **Area-Selective Atomic Layer Deposition Assisted by Self-Assembled Monolayers: A Comparison of Cu, Co, W, and Ru** *CHEMISTRY OF MATERIALS*
  Bobb-Semple, D., Nardi, K., Draeger, N., Hausmann, D. M., Bent, S. F.
  2019; 31 (5): 1635–45

- **Synthesis of Doped, Ternary, and Quaternary Materials by Atomic Layer Deposition: A Review** *CHEMISTRY OF MATERIALS*
  Mackus, A. J. M., Schneider, J. R., MacIsaac, C., Baker, J. G., Bent, S. F.
  2019; 31 (4): 1142–83

- **Role of Co2C in ZnO-promoted Co Catalysts for Alcohol Synthesis from Syngas** *CHEMCATCHEM*
  Singh, J. A., Hoffman, A. S., Schumann, J., Boubnov, A., Asundi, A. S., Nathan, S. S., Norskov, J., Bare, S. R., Bent, S. F.
  2019; 11 (2): 799–809

- **Stability of Tin-Lead Halide Perovskite Solar Cells**
  Prasanna, R., Leijtens, T., Dunfield, S. P., Raiford, J. A., Wolf, E. J., Swifter, S. A., Eperon, G. E., de Paula, C., Palmstrom, A. F., van Hest, M. M., Bent, S. F., Teeter, G., Berry, et al
  IEEE.2019: 2359–61

- **Area-Selective Atomic Layer Deposition of Dielectric-on-Dielectric for Cu/Low-k Dielectric Patterns**
  Liu, T., Bent, S. F.
  edited by Gronheid, R., Sanders, D. P.
  SPIE-INT SOC OPTICAL ENGINEERING.2019

- **Understanding Structure-Property Relationships of MoO3-Promoted Rh Catalysts for Syngas Conversion to Alcohols.** *Journal of the American Chemical Society*
  Asundi, A. S., Hoffman, A. S., Bothra, P. n., Boubnov, A. n., Vila, F. D., Yang, N. n., Singh, J. A., Zeng, L. n., Raiford, J. A., Abild-Pedersen, F. n., Bare, S. R., Bent, S. F.
  2019

- **Author Correction: A rigorous electrochemical ammonia synthesis protocol with quantitative isotope measurements.** *Nature*
  Andersen, S. Z., Čolić, V. n., Yang, S. n., Schwalbe, J. A., Nielander, A. C., McEnaney, J. M., Enemark-Rasmussen, K. n., Baker, J. G., Singh, A. R., Rohr, B. A., Statt, M. J., Blair, S. J., Mezzavilla, et al
  2019

- **Nanostructuring Strategies To Increase the Photoelectrochemical Water Splitting Activity of Silicon Photocathodes** *ACS APPLIED NANO MATERIALS*
  Hellstern, T. R., Nielander, A. C., Chakthranont, P., King, L. A., Willis, J. J., Xu, S., MacIsaac, C., Hahn, C., Bent, S. F., Prinz, F. B., Jaramillo, T. F.
  2019; 2 (1): 6–11

- **Theoretical and Experimental Studies of CoGa Catalysts for the Hydrogenation of CO2 to Methanol** *CATALYSIS LETTERS*
  Singh, J. A., Cao, A., Schumann, J., Wang, T., Norskov, J. K., Abild-Pedersen, F., Bent, S. F.
  2018; 148 (12): 3583–91

- **A Highly Active Molybdenum Phosphide Catalyst for Methanol Synthesis from CO and CO2** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
  Duyar, M. S., Tsai, C., Snider, J. L., Singh, J. A., Gallo, A., Yoo, J., Medford, A. J., Abild-Pedersen, F., Studt, F., Kibsgaard, J., Bent, S. F., Norskov, J. K., Jaramillo, et al
  2018; 57 (46): 15045–50

- **Encapsulating perovskite solar cells to withstand damp heat and thermal cycling** *SUSTAINABLE ENERGY & FUELS*
  Cheacharoen, R., Boyd, C. C., Burkhard, G. F., Leijtens, T., Raiford, J. A., Bush, K. A., Bent, S. F., McGehee, M. D.
  2018; 2 (11): 2398–2406

- **In situ observation of phase changes of a silica-supported cobalt catalyst for the Fischer-Tropsch process by the development of a synchrotron-compatible insitu/operando powder X-ray diffraction cell.** *Journal of synchrotron radiation*
  Hoffman, A. S., Singh, J. A., Bent, S. F., Bare, S. R.
  2018; 25 (Pt 6): 1673–82

- **Tin-lead halide perovskites with improved thermal and air stability for efficient all-perovskite tandem solar cells** *SUSTAINABLE ENERGY & FUELS*
  Leijtens, T., Prasanna, R., Bush, K. A., Eperon, G. E., Raiford, J. A., Gold-Parker, A., Wolf, E. J., Swifter, S. A., Boyd, C. C., Wang, H., Toney, M. F., Bent, S. F., McGehee, et al
  2018; 2 (11): 2450–59

- **Optical modeling of wide-bandgap perovskite and perovskite/silicon tandem solar cells using complex refractive indices for arbitrary-bandgap perovskite absorbers** *OPTICS EXPRESS*
  Manzoor, S., Haeusele, J., Bush, K. A., Palmstrom, A. F., Carpenter, J., Yu, Z. J., Bent, S. F., Mcgehee, M. D., Holman, Z. C.
  2018; 26 (21): 27441–60

- **Minimizing Current and Voltage Losses to Reach 25% Efficient Monolithic Two-Termina Perovskite-Silicon Tandem Solar Cells** *ACS ENERGY LETTERS*
  Bush, K. A., Manzoor, S., Frohna, K., Yu, Z. J., Raiford, J. A., Palmstrom, A. F., Wang, H., Prasanna, R., Bent, S. F., Holman, Z. C., McGehee, M. D.
  2018; 3 (9): 2173–80

- **Formation and Ripening of Self-Assembled Multilayers from the Vapor-Phase Deposition of Dodecanethiol on Copper Oxide** *CHEMISTRY OF MATERIALS*
  Bergsman, D. S., Liu, T., Closser, R. G., Nardi, K. L., Draeger, N., Hausmann, D. M., Bent, S. F.
  2018; 30 (16): 5694–5703

- **Interfacial Effects of Tin Oxide Atomic Layer Deposition in Metal Halide Perovskite Photovoltaics** *ADVANCED ENERGY MATERIALS*
  Palmstrom, A. F., Raiford, J. A., Prasanna, R., Bush, K. A., Sponseller, M., Cheacharoen, R., Minichetti, M. C., Bergsman, D. S., Leijtens, T., Wang, H., Bulovic, V., McGehee, M. D., Bent, et al
  2018; 8 (23)

- **Molecular Layer Deposition of a Highly Stable Silicon Oxycarbide Thin Film Using an Organic Chlorosilane and Water** *ACS APPLIED MATERIALS & INTERFACES*
  Closser, R. G., Bergsman, D. S., Bent, S. F.
  2018; 10 (28): 24266–74
- **Atomic and Molecular Layer Deposition of Hybrid Mo-Thiolate Thin Films with Enhanced Catalytic Activity** *ADVANCED FUNCTIONAL MATERIALS*
  MacIsaac, C., Schneider, J. R., Closser, R. G., Hellstern, T. R., Bergsman, D. S., Park, J., Liu, Y., Sinclair, R., Bent, S. F.
  2018; 28 (26)
- **Copper interstitial recombination centers in Cu3N** *PHYSICAL REVIEW B*
  Yee, Y., Inoue, H., Hultqvist, A., Hanifi, D., Salleo, A., Magyari-Kope, B., Nishi, Y., Bent, S. F., Clemens, B. M.
  2018; 97 (24)
- **Area-Selective Atomic Layer Deposition of Metal Oxides on Noble Metals through Catalytic Oxygen Activation** *CHEMISTRY OF MATERIALS*
  Singh, J. A., Thissen, N. F. W., Kim, W., Johnson, H., Kessels, W. M. M., Bol, A. A., Bent, S. F., Mackus, A. J. M.
  2018; 30 (3): 663–70
- **Photoelectrochemical Water Oxidation by GaAs Nanowire Arrays Protected with Atomic Layer Deposited NiO (x) Electrocatalysts**
  Zeng, J., Xu, X., Parameshwaran, V., Baker, J., Bent, S., Wong, H., Clemens, B.
  SPRINGER.2018: 932–37
- **Understanding the Active Sites of CO Hydrogenation on Pt-Co Catalysts Prepared Using Atomic Layer Deposition** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Singh, J. A., Yang, N., Liu, X., Tsai, C., Stone, K. H., Johnson, B., Koh, A., Bent, S. F.
  2018; 122 (4): 2184–94
- **The Role of Sodium in Tuning Product Distribution in Syngas Conversion by Rh Catalysts** *CATALYSIS LETTERS*
  Yang, N., Liu, X., Asundi, A. S., Norskov, J. K., Bent, S. F.
  2018; 148 (1): 289–97
- **Optical and Compositional Engineering of Wide Band Gap Perovskites with Improved Stability to Photoinduced Phase Segregation for Efficient Monolithic Perovskite/Silicon Tandem Solar Cells**
  Bush, K. A., Palmstrom, A. F., Yu, Z. J., Frohna, K., Manzoor, S., Ali, A., Ali, W., Prasanna, R., Beal, R. E., Leijtens, T., Bent, S. F., Holman, Z., McGehee, et al
  IEEE.2018: 0189–91
- **Thermal adsorption-enhanced atomic layer etching of Si3N4** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Kim, W., Sung, D., Oh, S., Woo, J., Lim, S., Lee, H., Bent, S. F.
  2018; 36 (1)
- **Photoactivated Molecular Layer Deposition through Iodo-Ene Coupling Chemistry** *CHEMISTRY OF MATERIALS*
  Lillethorup, M., Bergsman, D. S., Sandoval, T. E., Bent, S. F.
  2017; 29 (23): 9897–9906
- **Improved light management in planar silicon and perovskite solar cells using PDMS scattering layer**
  Manzoor, S., Yu, Z. J., Ali, A., Ali, W., Bush, K. A., Palmstrom, A. F., Bent, S. F., McGehee, M. D., Holman, Z. C.
  ELSEVIER SCIENCE BV.2017: 59–65
- **Chemisorption of Organic Triols on Ge(100)-2 x 1 Surface: Effect of Backbone Structure on Adsorption of Trifunctional Molecules** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Sandoval, T. E., Bent, S. F.
  2017; 121 (46): 25978–85
- **Autocatalytic Dissociative Adsorption of Imidazole on the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Shong, B., Kachian, J., Bent, S. F.
  2017; 121 (38): 20905–10
- **Rh-MnO Interface Sites Formed by Atomic Layer Deposition Promote Syngas Conversion to Higher Oxygenates** *ACS CATALYSIS*
  Yang, N., Yoo, J., Schumann, J., Bothra, P., Singh, J. A., Valle, E., Abild-Pedersen, F., Norskov, J. K., Bent, S. F.

2017; 7 (9): 5746–57

- **Investigation of inherent differences between oxide supports in heterogeneous catalysis in the absence of structural variations** *JOURNAL OF CATALYSIS*
  Yang, N., Bent, S. F.
  2017; 351: 49–58
- **Nanoengineering Heterogeneous Catalysts by Atomic Layer Deposition.** *Annual review of chemical and biomolecular engineering*
  Singh, J. A., Yang, N., Bent, S. F.
  2017; 8: 41-62
- **Adsorption of Homotrifunctional 1,2,3-Benzenetriol on a Ge(100)-2 × 1 Surface.** *Langmuir*
  Sandoval, T. E., Bent, S. F.
  2017
- **Formation of Germa-ketenimine on the Ge(100) Surface by Adsorption of tert-Butyl Isocyanide.** *Journal of the American Chemical Society*
  Shong, B., Yoo, J. S., Sandoval, T. E., Bent, S. F.
  2017
- **Correcting defects in area selective molecular layer deposition** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Closser, R. G., Bergsman, D. S., Ruelas, L., Hashemi, F. S., Bent, S. F.
  2017; 35 (3)
- **New strategies for selective deposition of nanoscale materials**
  Hashemi, F., Bobb-Semple, D., Bent, S.
  AMER CHEMICAL SOC.2017
- **Development of photo-activated iodo-ene reaction for molecular layer deposition**
  Lillethorup, M., Bergsman, D., Bent, S.
  AMER CHEMICAL SOC.2017
- **Modifying catalysts using atomic layer deposition**
  Yang, N., Asundi, A., Bent, S.
  AMER CHEMICAL SOC.2017
- **Molecular layer deposition of ultrathin manganese oxide hybrid materials for catalysis applications**
  Bergsman, D., Baker, J., Yang, N., MacIsaac, C., Strickler, A., Lillethorup, M., Bent, S.
  AMER CHEMICAL SOC.2017
- **Nanostructured tandem Si-Ta3N5 photoanodes for solar water splitting**
  Narkeviciute, I., Chakthranont, P., Mackus, A., Hahn, C., Pinaud, B., Bent, S., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **23.6%-efficient monolithic perovskite/silicon tandem solar cells with improved stability** *NATURE ENERGY*
  Bush, K. A., Palmstrom, A. F., Yu, Z. J., Boccard, M., Cheacharoen, R., Mailoa, J. P., McMeekin, D. P., Hoye, R. L. Z., Bailie, C. D., Leijtens, T., Peters, I., Minichetti, M. C., Rolston, et al
  2017; 2 (4)
- **Effect of Backbone Chemistry on the Structure of Polyurea Films Deposited by Molecular Layer Deposition** *CHEMISTRY OF MATERIALS*
  Bergsman, D. S., Closser, R. G., Tassone, C. J., Clemens, B. M., Nordlund, D., Bent, S. F.
  2017; 29 (3): 1192-1203
- **Incomplete elimination of precursor ligands during atomic layer deposition of zinc-oxide, tin-oxide, and zinc-tin-oxide.** *journal of chemical physics*
  Mackus, A. J., MacIsaac, C., Kim, W., Bent, S. F.
  2017; 146 (5): 052802-?
- **Buffer Layer Point Contacts for CIGS Solar Cells Using Nanosphere Lithography and Atomic Layer Deposition** *IEEE JOURNAL OF PHOTOVOLTAICS*
  Hultqvist, A., Sone, T., Bent, S. F.
  2017; 7 (1): 322-328

- **Photoanodes for Photoelectrochemical Water Splitting.** *Nano letters*
  Narkeviciute, I., Chakthranont, P., Mackus, A. J., Hahn, C., Pinaud, B. A., Bent, S. F., Jaramillo, T. F.
  2016; 16 (12): 7565-7572
- **Selective Deposition of Dielectrics: Limits and Advantages of Alkanethiol Blocking Agents on Metal-Dielectric Patterns.** *ACS applied materials & interfaces*
  Minaye Hashemi, F. S., Birchansky, B. R., Bent, S. F.
  2016; 8 (48): 33264-33272
- **Selective Deposition of Dielectrics: Limits and Advantages of Alkanethiol Blocking Agents on Metal-Dielectric Patterns** *ACS APPLIED MATERIALS & INTERFACES*
  Hashemi, F. S., Birchansky, B. R., Bent, S. F.
  2016; 8 (48): 33264-33272
- **Tandem Core-Shell Si-Ta3N5 Photoanodes for Photoelectrochemical Water Splitting** *NANO LETTERS*
  Narkeviciute, I., Chakthranont, P., Mackus, A. J., Hahn, C., Pinaud, B. A., Bent, S. F., Jaramillo, T. F.
  2016; 16 (12): 7565-7572
- **Perovskite-perovskite tandem photovoltaics with optimized band gaps** *SCIENCE*
  Eperon, G. E., Leijtens, T., Bush, K. A., Prasanna, R., Green, T., Wang, J. T., McMeekin, D. P., Volonakis, G., Milot, R. L., May, R., Palmstrom, A., Slotcavage, D. J., Belisle, et al
  2016; 354 (6314): 861-865
- **Sequential Regeneration of Self-Assembled Monolayers for Highly Selective Atomic Layer Deposition** *ADVANCED MATERIALS INTERFACES*
  Hashemi, F. S., Bent, S. F.
  2016; 3 (21)
- **Impact of Conformality and Crystallinity for Ultrathin 4 nm Compact TiO2 Layers in Perovskite Solar Cells** *ADVANCED MATERIALS INTERFACES*
  Roelofs, K. E., Pool, V. L., Bobb-Semple, D. A., Palmstrom, A. F., Santra, P. K., Van Campen, D. G., Toney, M. F., Bent, S. F.
  2016; 3 (21)
- **Molecular Ligands Control Superlattice Structure and Crystallite Orientation in Colloidal Quantum Dot Solids** *CHEMISTRY OF MATERIALS*
  Santra, P. K., Palmstrom, A. F., Tassone, C. J., Bent, S. F.
  2016; 28 (19): 7072-7081
- **Adsorption of heterobifunctional 4-nitrophenol on the Ge(100)-2 x 1 surface** *SURFACE SCIENCE*
  Shong, B., Hellstern, T. R., Bent, S. F.
  2016; 650: 279-284
- **Tailoring Mixed-Halide, Wide-Gap Perovskites via Multistep Conversion Process** *ACS APPLIED MATERIALS & INTERFACES*
  Bae, D., Palmstrom, A., Roelofs, K., Mei, B., Chorkendorff, I., Bent, S. F., Vesborg, P. C.
  2016; 8 (23): 14301-14306
- **A Process for Topographically Selective Deposition on 3D Nanostructures by Ion Implantation** *ACS NANO*
  Kim, W., Hashemi, F. S., Mackus, A. J., Singh, J., Kim, Y., Bobb-Semple, D., Fan, Y., Kaufman-Osborn, T., Godet, L., Bent, S. F.
  2016; 10 (4): 4451-4458
- **Intrinsic Selectivity and Structure Sensitivity of Rhodium Catalysts for C2+ Oxygenate Production.** *Journal of the American Chemical Society*
  Yang, N., Medford, A. J., Liu, X., Studt, F., Bligaard, T., Bent, S. F., Nørskov, J. K.
  2016; 138 (11): 3705-3714
- **Atomic layer deposited transition metal oxides as active electrocatalysts for the oxygen evolution reaction**
  Nardi, K., Baker, J., Mackus, A., Bent, S.
  AMER CHEMICAL SOC.2016
- **Growth, intermixing, and surface phase formation for zinc tin oxide nanolaminates produced by atomic layer deposition** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Hagglund, C., Grehl, T., Tanskanen, J. T., Yee, Y. S., Mullings, M. N., Mackus, A. J., MacIsaac, C., Clemens, B. M., Brongersma, H. H., Bent, S. F.

2016; 34 (2)

- **Strong Coupling of Plasmon and Nanocavity Modes for Dual-Band, Near-Perfect Absorbers and Ultrathin Photovoltaics** *ACS PHOTONICS*
  Haegglund, C., Zeltzer, G., Ruiz, R., Wangperawong, A., Roelofs, K. E., Bent, S. F.
  2016; 3 (3): 456-463
- **Polysulfide ligand exchange on zinc sulfide nanocrystal surfaces for improved film formation** *APPLIED SURFACE SCIENCE*
  Herron, S. M., Lawal, Q. O., Bent, S. F.
  2015; 359: 106-113
- **Quantifying Geometric Strain at the PbS QD-TiO2 Anode Interface and Its Effect on Electronic Structures** *NANO LETTERS*
  Trejo, O., Roelofs, K. E., Xu, S., Logar, M., Sarangi, R., Nordlund, D., Dadlani, A. L., Kravec, R., Dasgupta, N. P., Bent, S. F., Prinz, F. B.
  2015; 15 (12): 7829-7836
- **Deep recombination centers in Cu2ZnSnSe4 revealed by screened-exchange hybrid density functional theory** *PHYSICAL REVIEW B*
  Yee, Y. S., Magyari-Koepe, B., Nishi, Y., Bent, S. F., Clemens, B. M.
  2015; 92 (19)
- **Formation of Continuous Pt Films on the Graphite Surface by Atomic Layer Deposition with Reactive O-3** *CHEMISTRY OF MATERIALS*
  Lee, H., Bent, S. F.
  2015; 27 (19): 6802-6809
- **Self-Correcting Process for High Quality Patterning by Atomic Layer Deposition.** *ACS nano*
  Minaye Hashemi, F. S., Prasittichai, C., Bent, S. F.
  2015; 9 (9): 8710-8717
- **Creating Highly Active Atomic Layer Deposited NiO Electrocatalysts for the Oxygen Evolution Reaction** *ADVANCED ENERGY MATERIALS*
  Nardi, K. L., Yang, N., Dickens, C. F., Strickler, A. L., Bent, S. F.
  2015; 5 (17)
- **Increased Quantum Dot Loading by pH Control Reduces Interfacial Recombination in Quantum-Dot-Sensitized Solar Cells.** *ACS nano*
  Roelofs, K. E., Herron, S. M., Bent, S. F.
  2015; 9 (8): 8321-8334
- **Atomic layer deposition in nanostructured photovoltaics: tuning optical, electronic and surface properties.** *Nanoscale*
  Palmstrom, A. F., Santra, P. K., Bent, S. F.
  2015; 7 (29): 12266-83
- **Increased Quantum Dot Loading by pH Control Reduces Interfacial Recombination in Quantum-Dot-Sensitized Solar Cells** *ACS NANO*
  Roelofs, K. E., Herron, S. M., Bent, S. F.
  2015; 9 (8): 8321-8334
- **Reducing interface recombination for Cu(In,Ga)Se-2 by atomic layer deposited buffer layers** *APPLIED PHYSICS LETTERS*
  Hultqvist, A., Li, J. V., Kuciauskas, D., Dippo, P., Contreras, M. A., Levi, D. H., Bent, S. F.
  2015; 107 (3)
- **Investigating the function of metal oxide promoters on supported Rh catalysts for syngas conversion to oxygenates through surface and interface modification**
  Yang, N., Fleischman, S., Wang, P., Bent, S.
  AMER CHEMICAL SOC.2015
- **Unidirectional Adsorption of Bifunctional 1,4-Phenylene Diisocyanide on the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Shong, B., Sandoval, T. E., Crow, A. M., Bent, S. F.
  2015; 6 (6): 1037-1041
- **Unidirectional Adsorption of Bifunctional 1,4-Phenylene Diisocyanide on the Ge(100)-2 × 1 Surface.** *journal of physical chemistry letters*
  Shong, B., Sandoval, T. E., Crow, A. M., Bent, S. F.
  2015; 6 (6): 1037-1041
- **ALD of Ultrathin Ternary Oxide Electrocatalysts for Water Splitting** *ACS CATALYSIS*

Pickrahn, K. L., Garg, A., Bent, S. F.
2015; 5 (3): 1609-1616

- **Improving Performance in Colloidal Quantum Dot Solar Cells by Tuning Band Alignment through Surface Dipole Moments** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Santra, P. K., Palmstrom, A. F., Tanskanen, J. T., Yang, N., Bent, S. F.
  2015; 119 (6): 2996-3005
- **Applications of ALD MnO to electrochemical water splitting** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Pickrahn, K. L., Gorlin, Y., Seitz, L. C., Garg, A., Nordlund, D., Jaramillo, T. F., Bent, S. F.
  2015; 17 (21): 14003-14011
- **Atomic layer deposition in nanostructured photovoltaics: tuning optical, electronic and surface properties** *NANOSCALE*
  Palmstrom, A. F., Santra, P. K., Bent, S. F.
  2015; 7 (29): 12266-12283
- **Highly Textured Tin(II) Sulfide Thin Films Formed from Sheetlike Nanocrystal Inks** *CHEMISTRY OF MATERIALS*
  Herron, S. M., Tanskanen, J. T., Roelofs, K. E., Bent, S. F.
  2014; 26 (24): 7106-7113
- **Thermally Activated Reactions of Nitrobenzene at the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Shong, B., Bent, S. F.
  2014; 118 (50): 29224-29233
- **Bifacial solar cell with SnS absorber by vapor transport deposition** *APPLIED PHYSICS LETTERS*
  Wangperawong, A., Hsu, P., Yee, Y., Herron, S. M., Clemens, B. M., Cui, Y., Bent, S. F.
  2014; 105 (17)
- **Improving Area-Selective Molecular Layer Deposition by Selective SAM Removal** *ACS APPLIED MATERIALS & INTERFACES*
  Prasittichai, C., Pickrahn, K. L., Hashemi, F. S., Bergsman, D. S., Bent, S. F.
  2014; 6 (20): 17831-17836
- **Improving area-selective molecular layer deposition by selective SAM removal.** *ACS applied materials & interfaces*
  Prasittichai, C., Pickrahn, K. L., Hashemi, F. S., Bergsman, D. S., Bent, S. F.
  2014; 6 (20): 17831-17836
- **Coverage-Dependent Adsorption of Bifunctional Molecules: Detailed Insights into Interactions between Adsorbates** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Shong, B., Brogaard, R. Y., Sandoval, T. E., Bent, S. F.
  2014; 118 (41): 23811-23820
- **Nanoscale limitations in metal oxide electrocatalysts for oxygen evolution.** *Nano letters*
  Viswanathan, V., Pickrahn, K. L., Luntz, A. C., Bent, S. F., Nørskov, J. K.
  2014; 14 (10): 5853-5857
- **Nanoscale Limitations in Metal Oxide Electrocatalysts for Oxygen Evolution** *NANO LETTERS*
  Viswanathan, V., Pickrahn, K. L., Luntz, A. C., Bent, S. F., Norskov, J. K.
  2014; 14 (10): 5853-5857
- **Nanostructuring Materials for Solar-to-Hydrogen Conversion** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Guer, T. M., Bent, S. F., Prinz, F. B.
  2014; 118 (37): 21301-21315
- **Structural evolution of platinum thin films grown by atomic layer deposition** *JOURNAL OF APPLIED PHYSICS*
  Geyer, S. M., Methaapanon, R., Johnson, R., Brennan, S., Toney, M. F., Clemens, B., Bent, S.
  2014; 116 (6)
- **Band engineering of ternary lead chalcogenide quantum dots for colloidal quantum dot solar cells**
  Palmstrom, A. F., Santra, P. K., Bent, S. F.
  AMER CHEMICAL SOC.2014

- **Understanding metal oxide effects in syngas conversion catalysts through interface modification by atomic layer deposition**
  Yang, N., Fleischman, S., Bent, S. F.
  AMER CHEMICAL SOC.2014
- **Atomic layer deposition of ternary oxide electrocatalysts for water splitting**
  Pickrahn, K. L., Garg, A., Bent, S. F.
  AMER CHEMICAL SOC.2014
- **Strong carbon dative bond formed by isocyanides on the Ge(100)-2 x 1 surface**
  Shong, B., Wong, K. T., Bent, S. F.
  AMER CHEMICAL SOC.2014
- **Role of sulfur-based nanocrystal ligands in metal chalcogenide nanocrystal inks**
  Herron, S. M., Bent, S. F.
  AMER CHEMICAL SOC.2014
- **Role of molecular structure in surface chemical reactivity**
  Shong, B., Sandoval, T. E., Wong, K. T., Kachian, J. S., Bent, S. F.
  AMER CHEMICAL SOC.2014
- **Effect of O-3 on Growth of Pt by Atomic Layer Deposition** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Lee, H., Pickrahn, K. L., Bent, S. F.
  2014; 118 (23): 12325-12332
- **A brief review of atomic layer deposition: from fundamentals to applications** *MATERIALS TODAY*
  Johnson, R. W., Hultqvist, A., Bent, S. F.
  2014; 17 (5): 236-246
- **A New Resist for Area Selective Atomic and Molecular Layer Deposition on Metal-Dielectric Patterns** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Hashemi, F. S., Prasittichai, C., Bent, S. F.
  2014; 118 (20): 10957-10962
- **Correlating Growth Characteristics in Atomic Layer Deposition with Precursor Molecular Structure: The Case of Zinc Tin Oxide** *CHEMISTRY OF MATERIALS*
  Tanskanen, J. T., Hagglund, C., Bent, S. F.
  2014; 26 (9): 2795-2802
- **An atomic layer deposition chamber for in situ x-ray diffraction and scattering analysis** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Geyer, S. M., Methaapanon, R., Johnson, R. W., Kim, W., Van Campen, D. G., Metha, A., Bent, S. F.
  2014; 85 (5)
- **Strong Carbon-Surface Dative Bond Formation by tert-Butyl Isocyanide on the Ge(100)-2 x 1 Surface** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Shong, B., Wong, K. T., Bent, S. F.
  2014; 136 (16): 5848-5851
- **Thin film characterization of zinc tin oxide deposited by thermal atomic layer deposition** *THIN SOLID FILMS*
  Mullings, M. N., Haegglund, C., Tanskanen, J. T., Yee, Y., Geyer, S., Bent, S. F.
  2014; 556: 186-194
- **Manganese oxide oxygen evolution catalysts deposited by ALD**
  Pickrahn, K. L., Bent, S. F.
  AMER CHEMICAL SOC.2014
- **Strategies for selective deposition of organic and inorganic materials on patterned substrates**
  Hashemi, F. S. M., Prasittichai, C., Bent, S. F.
  AMER CHEMICAL SOC.2014
- **Tuning band alignment by surface dipole moments to improve performance of colloidal quantum dot solar cells**

Santra, P. K., Palmstrom, A. F., Bent, S. F.
AMER CHEMICAL SOC.2014

- **Interface Engineering in Inorganic-Absorber Nanostructured Solar Cells** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Roelofs, K. E., Brennan, T. P., Bent, S. F.
  2014; 5 (2): 348-360
- **Interface Engineering in Inorganic-Absorber Nanostructured Solar Cells.** *journal of physical chemistry letters*
  Roelofs, K. E., Brennan, T. P., Bent, S. F.
  2014; 5 (2): 348-360
- **Interface engineering in inorganic-absorber nanostructured solar cells** *J. Phys. Chem. Lett., Invited Perspective article*
  Roelofs, K., E., Brennan, T., P., Bent, S., F.
  2014; 5: 348−360
- **Molecular Layer Deposition of Nanoscale Organic Films for Nanoelectronics Applications** *ATOMIC LAYER DEPOSITION APPLICATIONS 10*
  Bergsman, D. S., Zhou, H., Bent, S. F.
  2014; 64 (9): 87-96
- **Selective metal deposition at graphene line defects by atomic layer deposition.** *Nature communications*
  Kim, K., Lee, H., Johnson, R. W., Tanskanen, J. T., Liu, N., Kim, M., Pang, C., Ahn, C., Bent, S. F., Bao, Z.
  2014; 5: 4781-?
- **Area Selective Molecular Layer Deposition of Polyurea Films** *ACS APPLIED MATERIALS & INTERFACES*
  Prasittichai, C., Zhou, H., Bent, S. F.
  2013; 5 (24): 13391-13396
- **Formation of Stable Nitrene Surface Species by the Reaction of Adsorbed Phenyl Isocyanate at the Ge(100)-2 x 1 Surface** *LANGMUIR*
  Wong, K. T., Tanskanen, J. T., Bent, S. F.
  2013; 29 (51): 15842-15850
- **Adsorption of Trimethyl Phosphite at the Ge(100)-2 x 1 Surface by Nucleophilic Reaction** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Wong, K. T., Shong, B., Sun, W., Bent, S. F.
  2013; 117 (50): 26628-26635
- **TiO2 Conduction Band Modulation with In2O3 Recombination Barrier Layers in Solid-State Dye-Sensitized Solar Cells** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Brennan, T. P., Tanskanen, J. T., Roelofs, K. E., To, J. W., Nguyen, W. H., Bakke, J. R., Ding, I., Hardin, B. E., Sellinger, A., McGehee, M. D., Bent, S. F.
  2013; 117 (46): 24138-24149
- **Dynamical Orientation of Large Molecules on Oxide Surfaces and its Implications for Dye-Sensitized Solar Cells** *CHEMISTRY OF MATERIALS*
  Brennan, T. P., Tanskanen, J. T., Bakke, J. R., Nguyen, W. H., Nordlund, D., Toney, M. F., McGehee, M. D., Sellinger, A., Bent, S. F.
  2013; 25 (21): 4354-4363
- **Tin oxide atomic layer deposition from tetrakis(dimethylamino)tin and water** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Mullings, M. N., Haegglund, C., Bent, S. F.
  2013; 31 (6)
- **Highly Stable Ultrathin Carbosiloxane Films by Molecular Layer Deposition** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Zhou, H., Bent, S. F.
  2013; 117 (39): 19967-19973
- **Insights into the Surface Chemistry of Tin Oxide Atomic Layer Deposition from Quantum Chemical Calculations** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Tanskanen, J. T., Bent, S. F.
  2013; 117 (37): 19056-19062
- **Adsorption of Structural and Stereoisomers of Cyclohexanediamine at the Ge(100)-2 x 1 Surface: Geometric Effects in Adsorption on a Semiconductor Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*

Wong, K. T., Bent, S. F.
2013; 117 (37): 19063-19073

- **Size Dependent Effects in Nucleation of Ru and Ru Oxide Thin Films by Atomic Layer Deposition Measured by Synchrotron Radiation X-ray Diffraction** *CHEMISTRY OF MATERIALS*
  Methaapanon, R., Geyer, S. M., Brennan, S., Bent, S. F.
  2013; 25 (17): 3458-3463
- **Competing geometric and electronic effects in adsorption of phenylenediamine structural isomers on the Ge(100)-2 x 1 surface** *SURFACE SCIENCE*
  Kachian, J. S., Squires, K. H., Bent, S. F.
  2013; 615: 72-79
- **Semiconductor surface functionalization for advances in electronics, energy conversion, and dynamic systems** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Teplyakov, A. V., Bent, S. F.
  2013; 31 (5)
- **Vapor transport deposition and epitaxy of orthorhombic SnS on glass and NaCl substrates** *APPLIED PHYSICS LETTERS*
  Wangperawong, A., Herron, S. M., Runser, R. R., Haegglund, C., Tanskanen, J. T., Lee, H., Clemens, B. M., Bent, S. F.
  2013; 103 (5)
- **Cross-Linked Ultrathin Polyurea Films via Molecular Layer Deposition** *MACROMOLECULES*
  Zhou, H., Toney, M. F., Bent, S. F.
  2013; 46 (14): 5638-5643
- **Atomic layer deposition of CdO and CdxZn1-xO films** *MATERIALS CHEMISTRY AND PHYSICS*
  Bakke, J. R., Haegglund, C., Jung, H. J., Sinclair, R., Bent, S. F.
  2013; 140 (2-3): 465-471
- **Self-assembly based plasmonic arrays tuned by atomic layer deposition for extreme visible light absorption.** *Nano letters*
  Hägglund, C., Zeltzer, G., Ruiz, R., Thomann, I., Lee, H., Brongersma, M. L., Bent, S. F.
  2013; 13 (7): 3352-3357
- **Self-Assembly Based Plasmonic Arrays Tuned by Atomic Layer Deposition for Extreme Visible Light Absorption** *NANO LETTERS*
  Haegglund, C., Zeltzer, G., Ruiz, R., Thomann, I., Lee, H., Brongersma, M. L., Bent, S. F.
  2013; 13 (7): 3352-3357
- **Fabrication of organic interfacial layers by molecular layer deposition: Present status and future opportunities** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Zhou, H., Bent, S. F.
  2013; 31 (4)
- **Highly sensitive, patternable organic films at the nanoscale made by bottom-up assembly.** *ACS applied materials & interfaces*
  Zhou, H., Blackwell, J. M., Lee, H., Bent, S. F.
  2013; 5 (9): 3691-3696
- **Effect of Al2O3 Recombination Barrier Layers Deposited by Atomic Layer Deposition in Solid-State CdS Quantum Dot-Sensitized Solar Cells** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Roelofs, K. E., Brennan, T. P., Dominguez, J. C., Bailie, C. D., Margulis, G. Y., Hoke, E. T., McGehee, M. D., Bent, S. F.
  2013; 117 (11): 5584-5592
- **Growth of Pt Nanowires by Atomic Layer Deposition on Highly Ordered Pyrolytic Graphite** *NANO LETTERS*
  Lee, H., Baeck, S. H., Jaramillo, T. F., Bent, S. F.
  2013; 13 (2): 457-463
- **One-Dimensional Pattern Formation of Adsorbed Molecules on the Ge(100)-2 X 1 Surface Driven by Nearest-Neighbor Effects** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Shong, B., Bent, S. F.
  2013; 117 (2): 949-955

- **In Vacuo Photoemission Studies of Platinum Atomic Layer Deposition Using Synchrotron Radiation** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Geyer, S. M., Methaapanon, R., Shong, B., Pianetta, P. A., Bent, S. F.
  2013; 4 (1): 176-179
- **In Vacuo Photoemission Studies of Platinum Atomic Layer Deposition Using Synchrotron Radiation.** *The journal of physical chemistry letters*
  Geyer, S. M., Methaapanon, R., Shong, B., Pianetta, P. A., Bent, S. F.
  2013; 4 (1): 176-9
- **Portable atomic layer deposition reactor for in situ synchrotron photoemission studies.** *Review of scientific instruments*
  Methaapanon, R., Geyer, S. M., Hagglund, C., Pianetta, P. A., Bent, S. F.
  2013; 84 (1): 015104-?
- **1D pattern formation of adsorbed molecules on the Ge(100)-2 × 1 surface driven by nearest neighbor effects** *J. Phys. Chem. C*
  Shong, B., Bent, S., F.
  2013; 2 (117): 949-955
- **Vapor transport deposition and epitaxy of orthorhombic SnS on glass and NaCl substrates** *Appl. Phys. Lett*
  Wangperawong, A., Herron, S., M., Runser, R., R., Hägglund, C., Tanskanen, J., Lee, H., B. R., Bent, S. F.
  2013; 103: 052105
- **Adsorption of trimethyl phosphite at the Ge(100)-2×1 surface by nucleophilic reaction** *J. Phys. Chem. C*
  Wong, K., T., Shong, B., S., Sun, W., Bent, S., F.
  2013; 117: 26628−26635
- **Adsorption of structural and stereoisomers of cyclohexanediamineat the Ge(100)-2 × 1 surface: geometric e#ects in adsorption on a semiconductor surface** *J. Phys. Chem. C*
  Wong, K., T., Bent, S., F.
  2013; 117: 19063−19073
- **Cross-linked ultrathin polyurea films via molecular layer deposition** *Macromolecules*
  Zhou, H., Toney, M., F., Bent, S., F.
  2013; 46: 5638−5643
- **Fabrication of organic interfacial layers by molecular layer deposition: present status and future opportunities** *J. Vac. Sci. Technol., invited review*
  Zhou, H., Bent, S., F.
  2013; 31: 040801
- **Insights into the surface chemistry of tin oxide atomic layer deposition from quantum chemical calculations** *J. Phys. Chem. C*
  Tanskanen, J., T., Bent, S., F.
  2013; 117: 19056−19062
- **Highly stable ultrathin carbosiloxane films by molecular layer deposition** *J. Phys. Chem.C*
  Zhou, H., Bent, S., F.
  2013; 117: 19967−19973
- **Efficiency enhancement of solid-state PbS quantum dot-sensitized solar cells with Al2O3 barrier layer** *JOURNAL OF MATERIALS CHEMISTRY A*
  Brennan, T. P., Trejo, O., Roelofs, K. E., Xu, J., Prinz, F. B., Bent, S. F.
  2013; 1 (26): 7566-7571
- **Size dependent effects in nucleation of Ru and Ru oxide thin films by atomic layer deposition measured by synchrotron radiation x-ray diffraction** *Chem. Mat*
  Methaapanon, R., Geyer, S., M., Brennan, S., Bent, S., F.
  2013; 25: 58−3463
- **The dynamical orientation of large molecules on oxide surfaces and its implications for dye-sensitized solar cells** *Chem. Mat.*
  Brennan, T., P., Tanskanen, J., T., Bakke, J., R., Nguyen, W., H., Nordlund, D., Toney, M., F., Bent, S. F.
  2013; 25: 4354−4363

- **Tin oxide atomic layer deposition from tetrakis(dimethylamino)tin and water** *J. Vac. Sci. Technol. A*
  Mullings, M., N., Hagglund, C., Bent, S., F.
  2013; 31: 061503
- **1D pattern formation of adsorbed molecules on the Ge(100)-2 × 1 surface driven by nearest neighbor effects** *J. Phys. Chem. C*
  Shong, B., Bent, S., F.
  2013; 2 (117): 949-955
- **Vapor transport deposition and epitaxy of orthorhombic SnS on glass and NaCl substrates** *Appl. Phys. Lett*
  Wangperawong, A., Herron, S., M., Runser, R., R., Hägglund, C., Tanskanen, J., Lee, H., B. R., Bent, S. F.
  2013; 103: 052105
- **Adsorption of trimethyl phosphite at the Ge(100)-2×1 surface by nucleophilic reaction** *J. Phys. Chem. C*
  Wong, K., T., Shong, B., S., Sun, W., Bent, S., F.
  2013; 117: 26628−26635
- **Adsorption of structural and stereoisomers of cyclohexanediamineat the Ge(100)-2 × 1 surface: geometric e#ects in adsorption on a semiconductor surface** *J. Phys. Chem. C*
  Wong, K., T., Bent, S., F.
  2013; 117: 19063−19073
- **Dissociative Adsorption of Dimethyl Sulfoxide at the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Wong, K. T., Chopra, S. N., Bent, S. F.
  2012; 116 (50): 26422-26430
- **Power losses in bilayer inverted small molecule organic solar cells** *APPLIED PHYSICS LETTERS*
  Trinh, C., Bakke, J. R., Brennan, T. P., Bent, S. F., Navarro, F., Bartynski, A., Thompson, M. E.
  2012; 101 (23)
- **Nucleation-Controlled Growth of Nanoparticles by Atomic Layer Deposition** *CHEMISTRY OF MATERIALS*
  Lee, H., Mullings, M. N., Jiang, X., Clemens, B. M., Bent, S. F.
  2012; 24 (21): 4051-4059
- **Active MnOx Electrocatalysts Prepared by Atomic Layer Deposition for Oxygen Evolution and Oxygen Reduction Reactions** *ADVANCED ENERGY MATERIALS*
  Pickrahn, K. L., Park, S. W., Gorlin, Y., Lee, H., Jaramillo, T. F., Bent, S. F.
  2012; 2 (10): 1269-1277
- **Functionalizing solid surfaces by monolayer and multilayer chemistry: From fundamentals to applications**
  Shong, B., Wong, K., Zhou, H., Bent, S.
  AMER CHEMICAL SOC.2012
- **Single versus Dual Attachment in the Adsorption of Diisocyanates at the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Wong, K. T., Chopra, S. N., Bent, S. F.
  2012; 116 (23): 12670-12679
- **Transition in the Molecular Orientation of Phenol Adsorbates on the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Shong, B., Bent, S. F.
  2012; 116 (14): 7925-7930
- **Coverage dependent configurational transformation of phenol on the Ge(100)-2x1 surface**
  Shong, B., Bent, S. F.
  AMER CHEMICAL SOC.2012
- **TiO2-SnO2:F interfacial electronic structure investigated by soft x-ray absorption spectroscopy** *PHYSICAL REVIEW B*
  Kronawitter, C. X., Kapilashrami, M., Bakke, J. R., Bent, S. F., Chuang, C., Pong, W., Guo, J., Vayssieres, L., Mao, S. S.
  2012; 85 (12)
- **Reaction of Hydroquinone and p-Benzoquinone with the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Shong, B., Wong, K. T., Bent, S. F.

2012; 116 (7): 4705-4713

- **Microstructure-Dependent Nucleation in Atomic Layer Deposition of Pt on TiO2** *CHEMISTRY OF MATERIALS*
  Lee, H., Bent, S. F.
  2012; 24 (2): 279-286
- **The importance of dye chemistry and TiCl4 surface treatment in the behavior of Al2O3 recombination barrier layers deposited by atomic layer deposition in solid-state dye-sensitized solar cells** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Brennan, T. P., Bakke, J. R., Ding, I., Hardin, B. E., Nguyen, W. H., Mondal, R., Bailie, C. D., Margulis, G. Y., Hoke, E. T., Sellinger, A., McGehee, M. D., Bent, S. F.
  2012; 14 (35): 12130-12140
- **Recombination Barrier Layers in Solid-State Quantum Dot-Sensitized Solar Cells** *38th IEEE Photovoltaic Specialists Conference (PVSC)*
  Roelofs, K. E., Brennan, T. P., Dominguez, J. C., Bent, S. F.
  IEEE.2012: 3040–3043
- **Nanopatterning by Area-Selective Atomic Layer Deposition** *ATOMIC LAYER DEPOSITION OF NANOSTRUCTURED MATERIALS*
  Lee, H., Bent, S. F.
  edited by Pinna, N., Knez, M.
  2012: 193–225
- **The low temperature atomic layer deposition of ruthenium and the effect of oxygen exposure** *JOURNAL OF MATERIALS CHEMISTRY*
  Methaapanon, R., Geyer, S. M., Lee, H., Bent, S. F.
  2012; 22 (48): 25154-25160
- **Growth characteristics, material properties, and optical properties of zinc oxysulfide films deposited by atomic layer deposition** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Bakke, J. R., Tanskanen, J. T., Haegglund, C., Pakkanen, T. A., Bent, S. F.
  2012; 30 (1)
- **Atomic Layer Deposition of CdS Quantum Dots for Solid-State Quantum Dot Sensitized Solar Cells** *ADVANCED ENERGY MATERIALS*
  Brennan, T. P., Ardalan, P., Lee, H., Bakke, J. R., Ding, I., McGehee, M. D., Bent, S. F.
  2011; 1 (6): 1169-1175
- **Electron Enrichment in 3d Transition Metal Oxide Hetero-Nanostructures** *NANO LETTERS*
  Kronawitter, C. X., Bakke, J. R., Wheeler, D. A., Wang, W., Chang, C., Antoun, B. R., Zhang, J. Z., Guo, J., Bent, S. F., Mao, S. S., Vayssieres, L.
  2011; 11 (9): 3855-3861
- **Three-dimensional nanojunction device models for photovoltaics** *APPLIED PHYSICS LETTERS*
  Wangperawong, A., Bent, S. F.
  2011; 98 (23)
- **Influence of organozinc ligand design on growth and material properties of ZnS and ZnO deposited by atomic layer deposition** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Tanskanen, J. T., Bakke, J. R., Pakkanen, T. A., Bent, S. F.
  2011; 29 (3)
- **Coverage dependence of glycine adsorption on the Ge(100)-2 x 1 surface** *SURFACE SCIENCE*
  Kachian, J. S., Jung, S. J., Kim, S., Bent, S. F.
  2011; 605 (7-8): 760-769
- **Molecular Layer Deposition of Functional Thin Films for Advanced Lithographic Patterning** *ACS APPLIED MATERIALS & INTERFACES*
  Zhou, H., Bent, S. F.
  2011; 3 (2): 505-511
- **Effects of Self-Assembled Monolayers on Solid-State CdS Quantum Dot Sensitized Solar Cells** *ACS NANO*
  Ardalan, P., Brennan, T. P., Lee, H., Bakke, J. R., Ding, I., McGehee, M. D., Bent, S. F.
  2011; 5 (2): 1495-1504
- **Aqueous bath process for deposition of Cu2ZnSnS4 photovoltaic absorbers** *THIN SOLID FILMS*
  Wangperawong, A., King, J. S., Herron, S. M., Tran, B. P., Pangan-Okimoto, K., Bent, S. F.

2011; 519 (8): 2488-2492

- **Tuning the reactivity of semiconductor surfaces by functionalization with amines of different basicity** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Bent, S. F., Kachian, J. S., Rodriguez-Reyes, J. C., Teplyakov, A. V.
  2011; 108 (3): 956-960
- **Disulfide Passivation of the Ge(100)-2 x 1 Surface** *LANGMUIR*
  Kachian, J. S., Tannaci, J., Wright, R. J., Tilley, T. D., Bent, S. F.
  2011; 27 (1): 179-186
- **Nanoengineering and interfacial engineering of photovoltaics by atomic layer deposition** *NANOSCALE*
  Bakke, J. R., Pickrahn, K. L., Brennan, T. P., Bent, S. F.
  2011; 3 (9): 3482-3508
- **Optical Response of 3D Nano-Architecture Solar Cells and Integration with 3D Device Physics** *Conference on Next Generation (Nano) Photonic and Cell Technologies for Solar Energy Conversion II*
  Wangperawong, A., Haegglund, C., Bent, S. F.
  SPIE-INT SOC OPTICAL ENGINEERING.2011
- **Atomic layer deposition of CdxZn1-xS films** *JOURNAL OF MATERIALS CHEMISTRY*
  Bakke, J. R., Tanskanen, J. T., Jung, H. J., Sinclair, R., Bent, S. F.
  2011; 21 (3): 743-751
- **Adsorption Behavior of Bifunctional Molecules on Ge(100)-2 x 1: Comparison of Mercaptoethanol and Mercaptamine** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Kachian, J. S., Bent, S. F.
  2010; 114 (50): 22230-22236
- **Deposition of Ultrathin Polythiourea Films by Molecular Layer Deposition** *CHEMISTRY OF MATERIALS*
  Loscutoff, P. W., Lee, H., Bent, S. F.
  2010; 22 (19): 5563-5569
- **Molecular Level Insights into Atomic Layer Deposition of CdS by Quantum Chemical Calculations** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Tanskanen, J. T., Bakke, J. R., Bent, S. F., Pakkanen, T. A.
  2010; 114 (39): 16618-16624
- **Reaction of tert-butyl isocyanate and tert-butyl isothiocyanate at the Ge(100)-2 x 1 Surface** *SURFACE SCIENCE*
  Loscutoff, P. W., Wong, K. T., Bent, S. F.
  2010; 604 (19-20): 1791-1799
- **Reaction of Phenyl Isocyanate and Phenyl Isothiocyanate with the Ge(100)-2 x 1 Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Loscutoff, P. W., Wong, K. T., Bent, S. F.
  2010; 114 (33): 14193-14201
- **Atomic Layer Deposition of CdS Films** *CHEMISTRY OF MATERIALS*
  Bakke, J. R., Jung, H. J., Tanskanen, J. T., Sinclair, R., Bent, S. F.
  2010; 22 (16): 4669-4678
- **Atomic layer deposition of ZnS via in situ production of H2S** *THIN SOLID FILMS*
  BAKKE, J. R., King, J. S., Jung, H. J., Sinclair, R., Bent, S. F.
  2010; 518 (19): 5400-5408
- **ALD Growth Characteristics of ZnS Films Deposited from Organozinc and Hydrogen Sulfide Precursors** *LANGMUIR*
  Tanskanen, J. T., Bakke, J. R., Bent, S. F., Pakkanen, T. A.
  2010; 26 (14): 11899-11906
- **Comparative Study of Titanium Dioxide Atomic Layer Deposition on Silicon Dioxide and Hydrogen-Terminated Silicon** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Methaapanon, R., Bent, S. F.
  2010; 114 (23): 10498-10504

- **Reaction Mechanism, Bonding, and Thermal Stability of 1-Alkanethiols Self-Assembled on Halogenated Ge Surfaces** *LANGMUIR*
  Ardalan, P., Sun, Y., Pianetta, P., Musgrave, C. B., Bent, S. F.
  2010; 26 (11): 8419-8429
- **Atomic Layer Deposition (ALD) Co-Deposited Pt-Ru Binary and Pt Skin Catalysts for Concentrated Methanol Oxidation** *CHEMISTRY OF MATERIALS*
  Jiang, X., Guer, T. N., Prinz, F. B., Bent, S. F.
  2010; 22 (10): 3024-3032
- **Periodic Trends in Organic Functionalization of Group IV Semiconductor Surfaces** *ACCOUNTS OF CHEMICAL RESEARCH*
  Kachian, J. S., Wong, K. T., Bent, S. F.
  2010; 43 (2): 346-355
- **Sputtered Pt-Ru Alloys as Catalysts for Highly Concentrated Methanol Oxidation** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Jiang, X., Guer, T. M., Prinz, F. B., Bent, S. F.
  2010; 157 (3): B314-B319
- **PHOSPHONATE SELF-ASSEMBLED MONOLAYERS AS ORGANIC LINKERS IN SOLID-STATE QUANTUM DOT SENSETIZED SOLAR CELLS**
  Ardalan, P., Brennan, T. P., Bakke, J. R., Bent, S. F., IEEE
  IEEE.2010: 951–54
- **Fabrication of organic thin films for copper diffusion barrier layers using molecular layer deposition**
  Loscutoff, P., W., Clendenning, S., B., Bent, S., F.
  2010
- **A CHEMICAL BATH PROCESS FOR DEPOSITING Cu2ZnSnS4 PHOTOVOLTAIC ABSORBERS** *35th IEEE Photovoltaic Specialists Conference*
  Wangperawong, A., King, J. S., Herron, S. M., Tran, B. P., Pangan-Okimoto, K., Bent, S. F.
  IEEE.2010: 1986–1989
- **ALD co-deposited and core-shell Ru-Pt catalysts for concentrated methanol oxidation** *Chem. Mat*
  Jiang, X., Gür, T., M., Prinz, F., B., Bent, S., F.
  2010; 22: 3024-3032
- **Catalysts with Pt Surface Coating by Atomic Layer Deposition for Solid Oxide Fuel Cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Shim, J. H., Jiang, X., Bent, S. F., Prinz, F. B.
  2010; 157 (6): B793-B797
- **Formation of Organic Nanoscale Laminates and Blends by Molecular Layer Deposition** *ACS NANO*
  Loscutoff, P. W., Zhou, H., Clendenning, S. B., Bent, S. F.
  2010; 4 (1): 331-341
- **Area Selective Atomic Layer Deposition by Microcontact Printing with a Water-Soluble Polymer** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Mullings, M. N., Lee, H., Marchack, N., Jiang, X., Chen, Z., Gorlin, Y., Lin, K., Bent, S. F.
  2010; 157 (12): D600-D604
- **Area-Selective ALD with Soft Lithographic Methods: Using Self-Assembled Monolayers to Direct Film Deposition** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Jiang, X., Bent, S. F.
  2009; 113 (41): 17613-17625
- **Photochemical Covalent Attachment of Alkene-Derived Monolayers onto Hydroxyl-Terminated Silica** *LANGMUIR*
  ter Maat, J., Regeling, R., Yang, M., Mullings, M. N., Bent, S. F., Zuilhof, H.
  2009; 25 (19): 11592-11597
- **Growth Process of Polyaniline Thin Films Formed by Hot Wire CVD** *CHEMICAL VAPOR DEPOSITION*
  Zaharias, G. A., Bent, S. F.
  2009; 15 (4-6): 133-141
- **Sulfur versus Oxygen Reactivity of Organic Molecules at the Ge(100)-2x1 Surface** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*

Kachian, J. S., Bent, S. F.
2009; 131 (20): 7005-7015

- **Controlling Atomic Layer Deposition of TiO2 in Aerogels through Surface Functionalization** *CHEMISTRY OF MATERIALS*
  Ghosal, S., Baumann, T. F., King, J. S., Kucheyev, S. O., Wang, Y., Worsley, M. A., Biener, J., Bent, S. F., Hamza, A. V.
  2009; 21 (9): 1989-1992
- **Formation of Alkanethiolate Self-Assembled Monolayers at Halide-Terminated Ge Surfaces** *LANGMUIR*
  Ardalan, P., Musgrave, C. B., Bent, S. F.
  2009; 25 (4): 2013-2025
- **Effects of Surface Functionalization on Titanium Dioxide Atomic Layer Deposition on Ge Surfaces** *5th Symposium on Atomic Layer Deposition held as part of the 216th Meeting of the Electrochemical-Society (ECS)*
  Ardalan, P., Musgrave, C. B., Bent, S. F.
  ELECTROCHEMICAL SOC INC.2009: 131–39
- **Metal Alloy Catalysts with Pt Surface Coating by Atomic Layer Deposition for Intermediate Temperature Ceramic Fuel Cells** *5th Symposium on Atomic Layer Deposition held as part of the 216th Meeting of the Electrochemical-Society (ECS)*
  Shim, J. H., Jiang, X., Bent, S., Prinz, F. B.
  ELECTROCHEMICAL SOC INC.2009: 323–32
- **Ultralow loading Pt nanocatalysts prepared by atomic layer deposition on carbon aerogels** *NANO LETTERS*
  King, J. S., Wittstock, A., Biener, J., Kucheyev, S. O., Wang, Y. M., Baumann, T. F., Giri, S. K., Hamza, A. V., Baeumer, M., Bent, S. F.
  2008; 8 (8): 2405-2409
- **Application of atomic layer deposition of platinum to solid oxide fuel cells** *CHEMISTRY OF MATERIALS*
  Jiang, X., Huang, H., Prinz, F. B., Bent, S. F.
  2008; 20 (12): 3897-3905
- **Formation of an oxide-free Ge/TiO2 interface by atomic layer deposition on brominated Ge** *APPLIED PHYSICS LETTERS*
  Ardalan, P., Pickett, E. R., Harris, J. S., Marshall, A. F., Bent, S. F.
  2008; 92 (25)
- **Plasma ash processing solutions for advanced interconnect technology** *28th Dry Process Symposium (DPS)*
  Fuller, N. C., Worsley, M. A., Tai, L., Bent, S., Labelle, C., Arnold, J., Dalton, T.
  ELSEVIER SCIENCE SA.2008: 3558–63
- **Surface patterning: Silicon falls into line** *NATURE NANOTECHNOLOGY*
  Bent, S. F.
  2008; 3 (4): 185-186
- **Silicon falls into line** *Nature Nanotechnology*
  Bent, S., F.
  2008; 3: 185-186
- **Semiconductor Surface Chemistry** *CHEMICAL BONDING AT SURFACES AND INTERFACES*
  Bent, S. F.
  edited by Nilsson, A., Pettersson, L. G., Norskov, J. K.
  2008: 323–95
- **Pt-Ru Alloys Deposited by Sputtering as Catalysts for Methanol Oxidation** *8th Symposium on Proton Exchange Membrane Fuel Cells*
  Jiang, X., Prinz, F. B., Bent, S. F.
  ELECTROCHEMICAL SOCIETY INC.2008: 605–12
- **Spatial control over atomic layer deposition using microcontact-printed resists** *16th European Conference on Chemical Vapor Deposition*
  Jiang, X., Chen, R., Bent, S. F.
  ELSEVIER SCIENCE SA.2007: 8799–8807
- **A model neural interface based on functional chemical stimulation** *BIOMEDICAL MICRODEVICES*
  Mehenti, N. Z., Fishman, H. A., Bent, S. F.

2007; 9 (4): 579-586

- **Heads or tails: Which is more important in molecular self-assembly?** *ACS NANO*
  Bent, S. F.
  2007; 1 (1): 10-12
- **Spatial cues for the enhancement of retinal pigment epithelial cell function in potential transplants** *BIOMATERIALS*
  Lee, C. J., Fishman, H. A., Bent, S. F.
  2007; 28 (13): 2192-2201
- **Thin collagen film scaffolds for retinal epithelial cell culture** *BIOMATERIALS*
  Lu, J. T., Lee, C. J., Bent, S. F., Fishman, H. A., Sabelman, E. E.
  2007; 28 (8): 1486-1494
- **Carbon-oxygen coupling in the reaction of formaldehyde on Ge(100)-2x1** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Filler, M. A., Musgrave, C. B., Bent, S. F.
  2007; 111 (4): 1739-1746
- **ALD resist formed by vapor-deposited self-assembled monolayers** *LANGMUIR*
  Hong, J., Porter, D. W., Sreenivasan, R., McIntyre, P. C., Bent, S. F.
  2007; 23 (3): 1160-1165
- **Thermal control of amide product distributions at the Ge(100)-2x1 surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Keung, A. J., Filler, M. A., Bent, S. F.
  2007; 111 (1): 411-419
- **Area-selective atomic layer deposition of platinum on YSZ substrates using microcontact printed SAMs** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Jiang, X., Bent, S. F.
  2007; 154 (12): D648-D656
- **Spatial clues for the enhancement of retinal pigment epithelial cell function in potential implants** *Biomaterials*
  Lee, C., J., Fishman, H., A., Bent, S., F.
  2007; 28: 2192-2201
- **Effect of radical species density and ion bombardment during ashing of extreme ultralow-kappa interlevel dielectric materials** *JOURNAL OF APPLIED PHYSICS*
  Worsley, M. A., Bent, S. F., Fuller, N. C., Tai, T. L., Doyle, J., Rothwell, M., Dalton, T.
  2007; 101 (1)
- **Characterization of neutral species densities in dual frequency capacitively coupled photoresist ash plasmas by optical emission actinometry** *JOURNAL OF APPLIED PHYSICS*
  Worsley, M. A., Bent, S. F., Fuller, N. C., Dalton, T.
  2006; 100 (8)
- **Highly stable monolayer resists for atomic layer deposition on germanium and silicon** *CHEMISTRY OF MATERIALS*
  Chen, R., Bent, S. F.
  2006; 18 (16): 3733-3741
- **A model retinal interface based on directed neuronal growth for single cell stimulation** *BIOMEDICAL MICRODEVICES*
  Mehenti, N. Z., Tsien, G. S., Leng, T., Fishman, H. A., Bent, S. F.
  2006; 8 (2): 141-150
- **Detecting free radicals during the hot wire chemical vapor deposition of amorphous silicon carbide films using single-source precursors** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Zaharias, G. A., Duan, H. L., Bent, S. F.
  2006; 24 (3): 542-549
- **Characterization of polyconjugated thin films synthesized by hot-wire chemical vapor deposition of aniline** *3rd International Conference on Hot-Wire CVD (Cat-CVD) Process*
  Zaharias, G. A., Shi, H. H., Bent, S. F.

ELSEVIER SCIENCE SA.2006: 341–45

- **Chemistry for positive pattern transfer using area-selective atomic layer deposition** *ADVANCED MATERIALS*
  Chen, R., Bent, S. F.
  2006; 18 (8): 1086-?

- **Formation of surface-bound acyl groups by reaction of acyl halides on Ge(100)-2x1** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Filler, M. A., Keung, A. J., Porter, D. W., Bent, S. F.
  2006; 110 (9): 4115-4124

- **Determination of human lens capsule permeability and its feasibility as a replacement for Bruch's membrane** *BIOMATERIALS*
  Lee, C. J., Vroom, J. A., Fishman, H. A., Bent, S. F.
  2006; 27 (8): 1670-1678

- **Carboxylic acid chemistry at the Ge(100)-2 x 1 interface: Bidentate bridging structure formation on a semiconductor surface** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Filler, M. A., Van Deventer, J. A., Keung, A. J., Bent, S. F.
  2006; 128 (3): 770-779

- **Reactivity of the germanium surface: Chemical passivation and functionalization** *ANNUAL REVIEW OF PHYSICAL CHEMISTRY*
  Loscutoff, P. W., Bent, S. F.
  2006; 57: 467-495

- **Analysis of plasma-induced modification of ULK and eULK materials: Dual damascene processing challenges for 45nm (kappa <= 2.4) and beyond BEOL technologies** *PROCEEDINGS OF THE IEEE 2006 INTERNATIONAL INTERCONNECT TECHNOLOGY CONFERENCE*
  Fuller, N. C., Worsley, M. A., Nitta, S., Dalton, T., Tai, T. L., Bent, S., Magbitang, T., Dubois, G., Miller, R., Volksen, W., Sankar, M., Purushothaman, S.
  2006: 24-26

- **Area selective atomic layer deposition by soft lithography**
  Chen, R., Kim, H., Porter, D., W., McIntyre, P., C., Bent, S., F.
  2006

- **Tertiary amide chemistry at the Ge(100)-2 x 1 surface** *SURFACE SCIENCE*
  Keung, A. J., Filler, M. A., Porter, D. W., Bent, S. F.
  2005; 599 (1-3): 41-54

- **Ethylenediamine on Ge(100)-2 x 1: The role of interdimer interactions** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Kim, A., Filler, M. A., Kim, S., Bent, S. F.
  2005; 109 (42): 19817-19822

- **Detection of open or closed porosity in low-kappa dielectrics by solvent diffusion** *MICROELECTRONIC ENGINEERING*
  Worsley, M. A., Roberts, M., Bent, S. F., GATES, S. M., Shaw, T., Volksen, W., Miller, R.
  2005; 82 (2): 113-118

- **The influence of filament material on radical production in hot wire chemical vapor deposition of a-Si : H** *THIN SOLID FILMS*
  Duan, H. L., Bent, S. F.
  2005; 485 (1-2): 126-134

- **Achieving area-selective atomic layer deposition on patterned substrates by selective surface modification** *APPLIED PHYSICS LETTERS*
  Chen, R., Kim, H., McIntyre, P. C., Porter, D. W., Bent, S. F.
  2005; 86 (19)

- **Layer-by-layer growth on Ge(100) via spontaneous urea coupling reactions** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Kim, A., Filler, M. A., Kim, S., Bent, S. F.
  2005; 127 (16): 6123-6132

- **Effect of plasma interactions with low-kappa films as a function of porosity, plasma, chemistry, and temperature** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B*
  Worsley, M. A., Bent, S. F., GATES, S. M., Fuller, N. C., Volksen, W., Steen, M., Dalton, T.
  2005; 23 (2): 395-405

- **Investigation of self-assembled monolayer resists for hafnium dioxide atomic layer deposition** *CHEMISTRY OF MATERIALS*
  Chen, R., Kim, H., McIntyre, P. C., Bent, S. F.
  2005; 17 (3): 536-544
- **Quantum chemistry based statistical mechanical model of hydrogen desorption from Si(100)-2 x 1, Ge(100)-2 x 1, and SiGe alloy surfaces** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Mui, C., Bent, S. F., Musgrave, C. B.
  2004; 108 (47): 18243-18253
- **Directed retinal nerve cell growth for use in a retinal prosthesis interface** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Leng, T., Wu, P., Mehenti, N. Z., Bent, S. F., Marmor, M. F., Blumenkranz, M. S., Fishman, H. A.
  2004; 45 (11): 4132-4137
- **A density functional theory study on the effect of Ge alloying on hydrogen desorption from SiGe alloy surfaces** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Mui, C., Bent, S. F., Musgrave, C. B.
  2004; 108 (20): 6336-6350
- **Self-assembled monolayer resist for atomic layer deposition of HfO2 and ZrO2 high-kappa gate dielectrics** *APPLIED PHYSICS LETTERS*
  Chen, R., Kim, H., McIntyre, P. C., Bent, S. F.
  2004; 84 (20): 4017-4019
- **Controlling cell adhesion on human tissue by soft lithography** *LANGMUIR*
  Lee, C. J., Blumenkranz, M. S., Fishman, H. A., Bent, S. F.
  2004; 20 (10): 4155-4161
- **A quantum chemistry based statistical mechanical model of hydrogen desorption from Si(100)#2x1, Ge(100)#2x1, and SiGe alloy surfaces** *J. Phys. Chem. B*
  Mui, C., Bent, S., F., Musgrave, C., B.
  2004; 108: 12559-12565
- **Hot wire chemical vapor deposition as a novel synthetic method for electroactive organic thin films** *Symposium on Flexible Electronics-Materials and Device Technology held at the 2004 MRS Spring Meeting*
  Zaharias, G. A., Shi, H. H., Bent, S. F.
  MATERIALS RESEARCH SOCIETY.2004: 361–366
- **Controlling area-selective atomic layer deposition of HfO2 dielectric by self-assembled monolayers** *Symposium on Integration of Advanced Micro-and Nanoelectronic Devices held at the 2004 MRS Spring Meeting*
  Chen, R., Kim, H., McIntyre, P. C., Bent, S. F.
  MATERIALS RESEARCH SOCIETY.2004: 57–62
- **Hot wire chemical vapor deposition as a novel synthetic method for electroactive organic thin films**
  Zaharias, G., A., Shi, H., H., Bent, S., F.
  2004
- **Pushing the limits of artificial vision** *IEEE Potentials*
  Mehenti, N., Z., Fishman, H., A., Bent, S., F.
  2004; 23: 21-23
- **Controlling area-selective atomic layer deposition of HfO2 dielectric by self-assembled monolayers**
  Chen, R., Kim, H., McIntyre, P., C., Bent, S., F.
  2004
- **Reactions of nitriles at semiconductor surfaces** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Mui, C., Filler, M. A., Bent, S. F., Musgrave, C. B.
  2003; 107 (44): 12256-12267
- **The artificial synapse chip: A flexible retinal interface based on directed retinal cell growth and neurotransmitter stimulation** *ARTIFICIAL ORGANS*
  Peterman, M. C., Mehenti, N. Z., Bilbao, K. V., Lee, C. J., Leng, T., Noolandi, J., Bent, S. F., Blumenkranz, M. S., Fishman, H. A.

2003; 27 (11): 975-985

- **The surface as molecular reagent: organic chemistry at the semiconductor interface** *PROGRESS IN SURFACE SCIENCE*
  Filler, M. A., Bent, S. F.
  2003; 73 (1-3): 1-56
- **Localized neurotransmitter release for use in a prototype retinal interface** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Peterman, M. C., Bloom, D. M., Lee, C., Bent, S. F., Marmor, M. E., Blumenkranz, M. S., Fishman, H. A.
  2003; 44 (7): 3144-3149
- **Reactions of cyclic aliphatic and aromatic amines on Ge(100)-2x1 and Si(100)-2x1** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Wang, G. T., Mui, C., Tannaci, J. F., Filler, M. A., Musgrave, C. B., Bent, S. F.
  2003; 107 (21): 4982-4996
- **Competition and selectivity in the reaction of nitriles on Ge(100)-2x1** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Filler, M. A., Mui, C., Musgrave, C. B., Bent, S. F.
  2003; 125 (16): 4928-4936
- **The study of modified layers in SiCOH dielectrics using spectroscopic ellipsometry**
  Worsley, M., A., Bent, S., F., Gates, S., M., Kumar, K., Dalton, T., Hedrick, J., C.
  2003
- **The study of modified layers in SiCOH dielectrics using spectroscopic ellipsometry** *Symposium on Materials, Technology and Reliability for Advanced Interconnects and Low-k Dielectrics held at the 2003 MRS Spring Meeting*
  Worsley, M. A., Bent, S. F., GATES, S. M., Kumar, K., Dalton, T., Hedrick, J. C.
  MATERIALS RESEARCH SOCIETY.2003: 235–239
- **Reaction of cyclic aliphatic and aromatic amines on Ge(100)-2x1 and Si(100)-2x1** *J. Phys. Chem. B*
  Wang, G., T., Mui, C., Tannaci, J., F., Filler, M., A., Musgrave, C., B., Bent, S., F.
  2003; 107: 4982
- **Microcontact printing on human tissue for retinal cell transplantation** *ARCHIVES OF OPHTHALMOLOGY*
  Lee, C. J., Huie, P., Leng, T., Peterman, M. C., Marmor, M. F., Blumenkranz, M. S., Bent, S. F., Fishman, H. A.
  2002; 120 (12): 1714-1718
- **Detecting reactive species in hot wire chemical vapor deposition** *CURRENT OPINION IN SOLID STATE & MATERIALS SCIENCE*
  Duan, H. L., Zaharias, G. A., Bent, S. F.
  2002; 6 (5): 471-477
- **Competition and selectivity of organic reactions on semiconductor surfaces: Reaction of unsaturated ketones on Si(100)-2x1 and Ge(100)-2x1** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Wang, G. T., Mui, C., Musgrave, C. B., Bent, S. F.
  2002; 124 (30): 8990-9004
- **Proton transfer reactions on semiconductor surfaces** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Mui, C., Han, J. H., Wang, G. T., Musgrave, C. B., Bent, S. F.
  2002; 124 (15): 4027-4038
- **Attaching organic layers to semiconductor surfaces** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Bent, S. F.
  2002; 106 (11): 2830-2842
- **Organic functionalization of group IV semiconductor surfaces: principles, examples, applications, and prospects** *SURFACE SCIENCE*
  Bent, S. F.
  2002; 500 (1-3): 879-903
- **Effect of filament material on the decomposition of SiH4 in hot wire CVD of Si-based films**
  Duan, H., L., Zaharias, G., A., Bent, S., F.
  2002

- **Effect of filament material on the decomposition of SiH4 in hot wire CVD of Si-based films** *AMORPHOUS AND HETEROGENEOUS SILICON-BASED FILMS-2002*
  Duan, H. L., Zaharias, G. A., Bent, S. F.
  2002; 715: 21-30
- **Example of a thermodynamically controlled reaction on a semiconductor surface: Acetone on Ge(100)-2 x 1** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Wang, G. T., Mui, C., Musgrave, C. B., Bent, S. F.
  2001; 105 (50): 12559-12565
- **pi bond versus radical character of the diamond (100)-2 x 1 surface** *Taiwan Diamond 2000: Taiwan International Di amond and Related Materials Science and Technology Symposium*
  RUSSELL, J. N., Butler, J. E., Wang, G. T., Bent, S. F., Hovis, J. S., Hamers, R. J., D'Evelyn, M. P.
  ELSEVIER SCIENCE SA.2001: 147–51
- **The effect of filament temperature on the gaseous radicals in the hot wire decomposition of silane** *1st International Conference on Cat-CVD (Hot Wire CVD) Process*
  Duan, H. L., Zaharias, G. A., Bent, S. F.
  ELSEVIER SCIENCE SA.2001: 36–41
- **Reactions of methylamines at the Si(100)-2x1 surface** *JOURNAL OF CHEMICAL PHYSICS*
  Mui, C., Wang, G. T., Bent, S. F., Musgrave, C. B.
  2001; 114 (22): 10170-10180
- **Effect of a methyl-protecting group on the adsorption of pyrrolidine on Si(100)-2 x 1** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Wang, G. T., Mui, C., Musgrave, C. B., Bent, S. F.
  2001; 105 (16): 3295-3299
- **Chemical engineering: Poised for progress** *CHEMICAL & ENGINEERING NEWS*
  Bent, S. F.
  2001; 79 (13): 58-58
- **Probing radicals in hot wire decomposition of silane using single photon ionization** *APPLIED PHYSICS LETTERS*
  Duan, H. L., Zaharias, G. A., Bent, S. F.
  2001; 78 (12): 1784-1786
- **The effect of a methyl protecting group on the adsorption of pyrrolidine on Si(100)-2x1** *J. Phys. Chem. B*
  Wang, G., T., Mui, C., Musgrave, C., B., Bent, S., F.
  2001; 105: 3295
- **Identification of growth precursors in hot wire CVD of amorphous silicon films**
  Duan, H., L., Zaharias, G., A., Bent, S., F.
  2001
- **Temperature effects in the hot wire chemical vapor deposition of amorphous hydrogenated silicon carbon alloy** *JOURNAL OF APPLIED PHYSICS*
  Lee, M. S., Bent, S. F.
  2000; 87 (9): 4600-4610
- **Interaction of C-6 cyclic hydrocarbons with a Si(100)-2x1 surface: Adsorption and hydrogenation reactions** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Kong, M. J., Teplyakov, A. V., Jagmohan, J., Lyubovitsky, J. G., Mui, C., Bent, S. F.
  2000; 104 (14): 3000-3007
- **A theoretical study of the structure and thermochemistry of 1,3-butadiene on the Ge/Si(100)-2 x 1 surface** *JOURNAL OF PHYSICAL CHEMISTRY A*
  Mui, C., Bent, S. F., Musgrave, C. B.
  2000; 104 (11): 2457-2462
- **Functionalization of diamond(100) by Diels-Alder chemistry** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Wang, G. T., Bent, S. F., RUSSELL, J. N., Butler, J. E., D'Evelyn, M. P.

2000; 122 (4): 744-745

- **Cycloaddition of cyclopentadiene and dicyclopentadiene on Si(100)-2x1: Comparison of monomer and dimer adsorption** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Wang, G. T., Mui, C., Musgrave, C. B., Bent, S. F.
  1999; 103 (32): 6803-6808
- **Adsorption of ethylene on the Ge(100)-2 x 1 surface: Coverage and time-dependent behavior** *JOURNAL OF CHEMICAL PHYSICS*
  Lal, P., Teplyakov, A. V., Noah, Y., Kong, M. J., Wang, G. T., Bent, S. F.
  1999; 110 (21): 10545-10553
- **In situ diagnostics of methane/hydrogen plasma interactions with Si(100)**
  Duan, H., L., Bent, S., F.
  1999
- **NEXAFS studies of adsorption of benzene on Si(100)-2 x 1** *SURFACE SCIENCE*
  Kong, M. J., Teplyakov, A. V., Lyubovitsky, J. G., Bent, S. F.
  1998; 411 (3): 286-293
- **Evidence for a retro-Diels-Alder reaction on a single crystalline surface: Butadienes on Ge(100)** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Teplyakov, A. V., Lal, P., Noah, Y. A., Bent, S. F.
  1998; 120 (29): 7377-7378
- **Spectroscopic and thermal studies of a-SiC : H film growth: Comparison of mono-, tri-, and tetramethylsilane** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Lee, M. S., Bent, S. F.
  1998; 16 (3): 1658-1663
- **Diels-Alder reactions of butadienes with the Si(100)-2x1 surface as a dienophile: Vibrational spectroscopy, thermal desorption and near edge x-ray absorption fine structure studies** *JOURNAL OF CHEMICAL PHYSICS*
  Teplyakov, A. V., Kong, M. J., Bent, S. F.
  1998; 108 (11): 4599-4606
- **Spectroscopic and thermal studies of a-SiC:H film growth: comparison of mono-, tri-, and tetramethylsilane** *J. Vac. Sci. Technol. A*
  Lee, M., S., Bent, S., F.
  1998; 16: 1658
- **Temperature-dependent studies of a-SiC:H growth by remote plasma CVD using methylsilanes**
  Lee, M., S., Lal, P., Bent, S., F.
  1998
- **Etching, insertion, and abstraction reactions of atomic deuterium with amorphous silicon hydride films** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Chiang, C. M., GATES, S. M., Lee, S. S., Kong, M., Bent, S. F.
  1997; 101 (46): 9537-9547
- **Vibrational spectroscopic studies of Diels-Alder reactions with the Si(100)-2x1 surface as a dienophile** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Teplyakov, A. V., Kong, M. J., Bent, S. F.
  1997; 119 (45): 11100-11101
- **Bonding and thermal reactivity in thin a-SiC:H films grown by methylsilane CVD** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Lee, M. S., Bent, S. F.
  1997; 101 (45): 9195-9205
- **Bonding and thermal reactivity in thin a-SiC:H films grown by methylsilane CVD** *J. Phys. Chem. B*
  Lee, M., S., Bent, S., F.
  1997; B101: 9195
- **Infrared study of the reactions of atomic deuterium with amorphous silicon monohydride** *JOURNAL OF PHYSICAL CHEMISTRY*

Lee, S. S., Kong, M. J., Bent, S. F., Chiang, C. M., GATES, S. M.
1996; 100 (51): 20015-20020

- **Infrared spectroscopy of methyl groups on silicon** *CHEMICAL PHYSICS LETTERS*
  Kong, M. J., Lee, K. S., Lyubovitsky, J., Bent, S. F.
  1996; 263 (1-2): 1-7
- **Hydrogen recombinative desorption dynamics** *Laser Spectroscopy and Photochemistry on Metal Surfaces*
  Bent, S., F., Michelsen, H., A., Zare, R., N.
  edited by Dai, H.-L., Ho, W.
  World Scientific, New Jersey.1995
- **Synthesis, layer assembly, and fluorescence dynamics of poly(phenylene vinylene) oligomer phosphonates**
  Katz, H., E., Shane (Bent), S., F., Wilson, W., L., Schilling, M., L., Ungashe, S., B.
  1994
- **Synthesis, layer assembly, and fluorescence dynamics of poly(phenylene vinylene) oligomer phosphonates** *J. Am. Chem. Soc.*
  Katz, H., E., Bent, S., F., Wilson, W., L., Schilling, M., L., Ungashe, S.
  1994; 116: 6631
- **Structural characterization of self-assembled multilayers by FTIR** *Chem. Mater.*
  Bent, S., F., Schilling, M., L., Wilson, W., L., Katz, H., E., Harris, A., L.
  1994; 6: 122
- **Photoluminescence studies of self-assembled phenylene vinylene oligomer films** *Polym. Prepr. (Am. Chem. Soc., Div. Polym. Chem.)*
  Shane (Bent), S., F., Wilson, W., L., Katz, H., E., Schilling, M., L., Ungashe, S.
  1994; 35: 315
- **Structural studies of zirconium alkylphosphonate monolayers and multilayer assemblies** *Langmuir.*
  Schilling, M., L., Katz, H., E., Stein, S., M., Shane (Bent), S., F., Wilson, W., L., Ungashe, S., B.
  1993; 9: 2156
- **Control of polarity and supramolecular optical effects in rigid surface assemblies** *Polym. Prepr. (Am. Chem. Soc., Div. Polym. Chem.)*
  Katz, H., E., Schilling, M., L., Ungashe, S., B., Shane (Bent), S., Scheller, G., Wilson, W., L.
  1993; 34: 793
- **Recombinative desorption of H2 on Si(100)-(2x1) and Si(111)-(7x7): comparison of internal state distributions** *J. Chem. Phys*
  Shane (Bent), S., F., Kolasinski, K., W., Zare, R., N.
  1992; 97: 1520
- **Internal-state distributions of recombinative hydrogen desorption from Si(100)** *J. Chem. Phys*
  Kolasinski, K., W., Shane (Bent), S., F., Zare, R., N.
  1992; 96: 3995
- **Internal-state distributions of H2 desorbed from mono- and dihydride species on Si(100)** *J. Chem. Phys*
  Shane (Bent), S., F., Kolasinski, K., W., Zare, R., N.
  1992; 97: 3704
- **A state-specific study of hydrogen desorption from Si(100)-(2x1): comparison of disilane and hydrogen adsorption** *J. Vac. Sci. Technol*
  Shane (Bent), S., F., Kolasinski, K., W., Zare, R., N.
  1992; A10: 2287
- **Probing the dynamics of hydrogen recombination on Si(100)** *J. Chem. Phys*
  Kolasinski, K., W., Shane, S., F., Zare, R., N.
  1991; 95: 5482
- **Surface vibrational energy relaxation by coupling to electron-hole pairs: c(2x2)-CO/Cu(100)**
  Shane (Bent), S., F., Rothberg, L., Dubois, L., H., Levinos, N., J., Morin, M., Harris, A., L
  1990

- **Vibrational energy transfer to metal surfaces probed by sum generation: CO/Cu(100) and CH3S/Ag(111)** *J. Electron Spectrosc. Related Phenom*
  Harris, A., L., Levinos, N., J., Rothberg, L., Dhar, L., H., Shane (Bent), S., F., Morin, M.
  1990; 54/55: 5
- **Rotational population and alignment distributions for inelastic scattering and trapping/desorption of NO on Pt(111)** *J. Chem. Phys*
  Jacobs, D., C., Kolasinski, K., W., Shane (Bent), S., F., Zare, R., N.
  1989; 91: 3182
- **The electronic state-selective photodissociation of CH2BrI at 248, 210, and 193 nm** *J. Chem. Phys*
  Butler, L., J., Hintsa, E., J., Shane (Bent), S., F., Lee, Y., T.
  1987; 86: 2051
- **Ultrathin light absorbers based on plasmonic nanocomposites** *SPIE Newsroom*
  Hägglund, C., Bent, S., F.