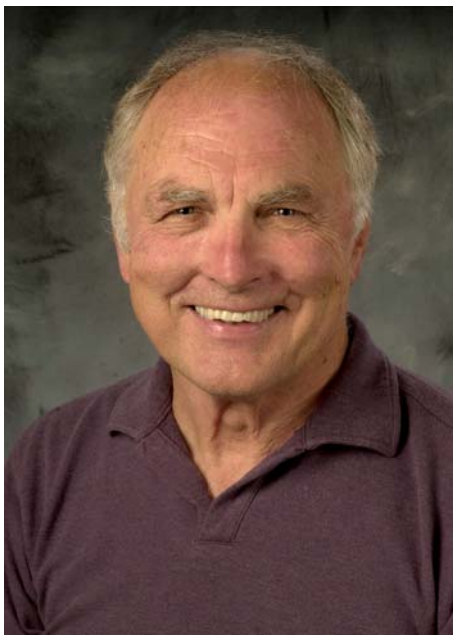

Prof. Galen D Stucky

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Galen D. Stucky earned his doctorate from Iowa State University in 1962. He held positions at the University of Illinois, Sandia National Laboratory, and DuPont Central Research and Development before joining the faculty of the University of California, Santa Barbara, in 1985, where he is Professor in the Department of Chemistry & Biochemistry and the Materials Department and a member of the Interdepartmental Program in Biomolecular Science and Engineering. His current research interests include molecular assembly of nanoscale to macroscale components of composite systems; the interface of inorganics with biomolecules; chemistry associated with the efficient utilization of energy resources; and understanding Nature's routes to organic/inorganic bioassembly. He has published over 700 scientific articles and has been awarded 20 patents. Honors include the ACS Award in Chemistry of Materials (2002), the IMMA (International Mesostructured Materials Association) Award (2004), and the ATACCC (Advanced Technology Applications for Combat Casualty Care) Award (2008). He was elected Fellow, American Academy of Arts and Sciences, in 2005.

Research Objective

Organic/inorganic interface chemistry including the molecular assembly of material systems with integrated nanoscale to macroscale functionalities; the use of inorganic species and surfaces to define biomolecular assembly (e.g., transmembrane proteins) and biosystem processes (e.g. blood clotting cascade chemistry and hemostasis); conversion of methane (biomethane and stranded natural gas) to chemicals and fuels; meso- and nanostructured photovoltaic and photocatalytic composite systems; gradient materials and interfaces; and understanding Nature's routes to organic/inorganic bioassembly.

Selected Research Publication

Fabrication of Ag@SiO(2)@Y(2)O(3):Er nanostructures for bioimaging: Tuning of the upconversion fluorescence with silver nanoparticles, Fan Zhang, Gary B. Braun, Yifeng Shi, Yichi Zhang, Xiaohong Sun, Norbert O. Reich, Dongyuan Zhao, and Galen D. Stucky, J. Am. Chem. Soc. 132, 2850-2851 (2010)

Low-temperature, highly selective, gas-phase oxidation of benzyl alcohol over mesoporous K-Cu-TiO2 with stable copper(I) oxidation state, Jie Fan, Yunlong Li, Yihu Dai, Nanfeng Zheng, Junfang Guo, and Galen D. Stucky, J. Am. Chem. Soc. 131, 15568-15569 (2009)

Ionic ligand mediated electrochemical charging of gold nanoparticle assemblies, Shannon

W. Boettcher, Sebastian A. Berg, Martin Schierhorn, Nicholas C. Strandwitz, Mark C. Lonergan, and Galen D. Stucky, Nano Lett. 8, 3404-3408 (2008)

Field-directed and confined molecular assembly of mesostructured materials: basic principles and new opportunities, Jie Fan, Shannon W. Boettcher, Chia-Kuang Tsung, Qihui Shi, Martin Schierhorn, and Galen D. Stucky, Chem. Mater. 20, 909 - 921 (2008)

Facile RAFT precipitation polymerization for the microwave-assisted synthesis of well-defined, double hydrophilic block copolymers and nanostructured hydrogels, Zesheng An, Qihui Shi, Wei Tang, Chia-Kuang Tsung, Craig J. Hawker, and Galen D. Stucky, J. Am. Chem. Soc. 129, 14493-14499 (2007)

Assembly of spherical micelles in 2D physical confinements and their replication into mesoporous silica nanorods, Arne Thomas, Martin Schierhorn, Yiying Wu and Galen Stucky, J. Mater. Chem. 17, 4558-4562 (2007)

Controlling bioprocesses with inorganic surfaces: layered clay hemostatic agents, Sarah E. Baker, April M. Sawvel, Nanfeng Zheng, and Galen D. Stucky, Chem. Mater. 19, 4390-4392 (2007)

A general synthetic strategy for oxide-supported metal nanoparticle catalysts, Nanfeng Zheng and Galen D. Stucky, J. Am. Chem. Soc. 128, 14278-14280 (2006)

Increased efficiency in multijunction solar cells through the incorporation of semimetallic ErAs nanoparticles into the tunnel junction, Joshua M. O. Zide, Alan Kleiman-Shwarsctein, Nicholas C. Strandwitz, Jeramy D. Zimmerman, Teiwaz T. Steenblock-Smith, and Arthur C. Gossard, Arnold Forman, Anna Ivanovskaya, and Galen D. Stucky, Appl. Phys. Lett. 88, 162103 (2006)