



Charles Michael Drain  
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#### Education

Tufts University	Ph.D.	1988
University of Missouri	BA	1981

#### Professional Experience

Professor	Hunter College	2004 - Present
Associate Professor	Hunter College	2000 - 2004
Assistant Professor	Hunter College	1996 - 1999
Adjunct Faculty	The Rockefeller University	1996 - Present
Lab Director	Midco Products, Inc., St.Louis	1981 - 1984

#### Research Interests

Self-assembly and self-organization discrete arrays and films. Design, synthesis, characterization, and biological activities of porphyrinoid compounds - especially a photodynamic therapeutics (PDT). This is also an integrated project that entails chemistry, biology, and spectroscopy. We have discovered a series of new compounds that are significantly better than the current FDA approved technology. Nanoparticles of some of these macrocycles serve as drug delivery agents and in vivo biological sensors.

#### Selected Publications

- Photodynamic Therapy Using Carbohydrate Conjugated Porphyrins X. Chen and C.M. Drain, *Drug Design Reviews - Online*, 2004, 1(3), 215-234. Bentham Science Publishers Ltd.
- *Efficient Synthesis and Photodynamic Activity of Porphyrin-Saccharide Conjugates: Targeting and Incapacitating Cancer Cells* X. Chen, L. Hui, D. A. Foster, C. M. Drain, 2004, 43, 10918-10929.
- *Synthesis of Gradient Copolymer Brushes via Surface Initiated Atom Transfer Radical Copolymerization* C. Xu, T. Wu, C. M. Drain, J. D. Batteas, K. L. Beers *ACS Polymer Reprints*, Fall, 2004.
- *Organizing Self-Assembled Porphyrin Arrays On Metal And Glass Surfaces* C.M. Drain, T. Milic, J. C. Garno, G. Smeureanu, J.D. Batteas *ACS Polymer Reprints* 2004, 45(1), 346-347.
- *Self-Organization of Self-Assembled Tetrameric Porphyrin Arrays on Surfaces* T. Milic, J. C. Garno, G. Smeureanu, J. D. Batteas, C. M. Drain, *Langmuir*, 2004, 20, 3974-3983.
- *Self-assembled Porphyrin Arrays on Surfaces* C.M. Drain, G. Smeareanu, J.D. Batteas, S. Patel. Book chapter: *Dekker Encyclopedia of Nanotechnology*, Vol 5. pp3481-3502. J.A. Schwartz, C.I. Contescu, K. Putyera, Eds.; Marcel Dekker, Inc. New York, 2004.
- *A Bench Top Method for the Fabrication and Patterning of Nanoscale Structures on Polymers* J. M. Helt, C. M. Drain, J. D. Batteas, *J. Am. Chem. Soc.* 136, 2004, 628-634.
- *Self-Assembled Porphyrinic Nanoarchitectures* C.M. Drain, X. Chen. Book chapter: *Encyclopedia of Nanoscience & Nanotechnology* Vol. 9, pp593-616. H.S. Nalwa Edt., American Scientific Press, 2004.

## Grants

- Combinatorial Chemistry of Porphyrins, NIH 2004 (SCORE) \$550K
- fellowship for graduate student Chang Xu N.I.S.T. 2004: \$8K
- Porphyrin Therapeutics, PSC-CUNY 2003 \$4K
- fellowship graduate N.S.F.-N.I.S.T. 2004 \$6.6K
- Self-Assembled Phonic Materials N.S.F. 2002 \$360K
- Binational Science Foundation, with Israel Goldberg Israel-US 2000: \$240K
- Interdisciplinary Graduate Education Training Research, N.S.F. 1999: IGERT Co-PI  
~\$1000K/year, 4 years for HC, ~\$3.5M for the program