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David Cooperberg is an Associate in the Firm's Litigation department. His practice focuses on patent litigation in federal district courts, as well as post-grant proceedings in the U.S. Patent and Trademark Office. His experience encompasses a broad spectrum of technologies, including semiconductor design and manufacturing, solid-state memories, wireless, cable and fiber-based networking, LEDs, and automotive entertainment systems.

Dr. Cooperberg has a technical engineering background. He served as a staff process and modeling engineer at Lam Research Corporation for 10 years, where he designed, implemented, and maintained a semi-empirical profile simulator for modeling feature evolution during plasma processing of integrated circuits. He also provided electromagnetics, fluid dynamics, and plasma discharge modeling support for product development using commercial, university and internally developed codes, and he developed algorithms for an interferometric endpoint system.

While earning his doctorate in physics, Dr. Cooperberg served as a research assistant in the Electronics Research Laboratory of the University of California at Berkeley, where he conducted computer simulations of surface wave sustained plasma discharges. He was also a research assistant in the Lawrence Berkeley Laboratory where he researched quantum effects in low temperature superconducting circuits.

Dr. Cooperberg is the co-author and named inventor on six U.S. patents involving innovations in the field of plasma process development and plasma processor design. He has also authored or co-authored several publications on various topics relating to plasma processing of semiconductors including plasma reactor modeling and feature scale profile simulation.

Education

- Fordham University School of Law (J.D., *cum laude*, 2010)
 - *Fordham Intellectual Property, Media, and Entertainment Law Journal*
- University of California, Berkeley (Ph.D., 1998)
 - Dissertation: *Modeling and Simulation of High Frequency Surface Waves in Bounded Plasmas*
- Cornell University (B.S., *with distinction*, 1990)

Admissions

- Registered Patent Attorney: U.S. Patent and Trademark Office
- New York
- New Jersey

Publications and Presentations

- "Surface and Reactor Dynamics Governing Photoresist Trim and Organic BARC Open Plasma Processing," D.J. Cooperberg, S. Johnston, D. Horak, V. Vahedi; *50th American Vacuum Society International Symposium*, Baltimore, MD, November 2-7, 2003
- "Feature Scale Model of Etching High Aspect Ratio Structures in Silicon using SF₆/O₂ Plasma," R.J. Belen, S. Gomez, M.W. Kiehlbauch, D.J. Cooperberg, E.S. Aydil; *50th American Vacuum Society International Symposium*, Baltimore, MD, November 2-7, 2003
- "Semi-empirical profile simulation of aluminum etching in a Cl₂/BCl plasma," D.J. Cooperberg, V. Vahedi, R.A. Gottscho; *Journal of Vacuum Science and Technology A*, September 2002, vol. 20(5), pp.1536-1556.
- "Predictive Profile Evolution Simulation in Plasma Etching," V. Vahedi, D.J. Cooperberg, L.B. Braly, R.A. Gottscho; invited paper, *48th American Vacuum Society International Symposium*, San Francisco, CA, October 28 – November 2, 2001.
- "Experimental and Modeling Results for Process Scaling from 200 mm to 300 mm Wafers," S.C. Siu, D. Cooperberg, V. Vahedi, R. Patrick; *47th American Vacuum Society International Symposium*, Boston, MA, October 2-6, 2000
- "A General Predictive Semi-Empirical Feature Profile Simulator," D.J. Cooperberg, V. Vahedi; *45th American Vacuum Society International Symposium*, Baltimore, MD, November 2-6, 1998.
- "Profile Control of Sub -0.3mm Contact Etch Features in a Medium-Density Oxide Etch Reactor," D. Keil, D. Cooperberg, L. Li, G. Mueller, T. Nguyen, K. Khajehnouri, V. Vahedi, and G. Hills; *Electrochemical Society 193rd Meeting, Dielectric Science and Technology Division*, San Diego, CA, May 3-8, 1998.
- "Surface Wave Sustained Plasmas in a Metal Bound Plasma Slab," D.J. Cooperberg and C.K. Birdsall; *Plasma Sources Science and Technology*, February 1998, vol. 7, (no.1) pp 41-53
- "Series Resonance Sustained Plasmas in a Metal Bound Plasma Slab," D.J. Cooperberg and C.K. Birdsall; *Plasma Sources Science and Technology*, February 1998, vol. 7, (no.1) pp 96-113
- "Electron Surface Waves in a Non-uniform Plasma Slab," D.J. Cooperberg; *Physics of Plasmas*, April 1998, vol. 5, (no.4), pp.862-72
- "Electron Surface Waves in a Plasma Slab with Uniform Ion Density," D.J. Cooperberg; *Physics of Plasmas*, April 1998, vol. 5, (no.4), pp.853-61

Patents and Patent Applications

- D. Cooperberg, V. Vahedi, R. Douglas, H. Singh, N. Benjamin, "Tunable multi-zone gas injection system," US Patent Application 20030070620, April 17, 2003
- N. Benjamin, D. Cooperberg, "Plasma processor coil," US Patent 7,571,697, August 11, 2009
- D. Cooperberg, V. Vahedi, "Enhanced process and profile simulator algorithms," US Patent 6,804,572, October 12, 2004
- D. Cooperberg, V. Vahedi, "Applications of a semi-empirical, physically based, profile simulator," US Patent 6,577,915, June 10, 2003
- J.E. Daugherty, N. Benjamin, J. Bogart, V. Vahedi, D. Cooperberg, A. Miller, Y. Yamaguchi, "Techniques for improving etch rate uniformity," US Patent 6,344,105, February 5, 2002
- D. Cooperberg, R.A. Gottscho, V. Vahedi, "Method and apparatus to calibrate a semi-empirical process simulator," US Patent 6,301,510, October 9, 2001