Charles Fleddermann

Education: Ph.D. Electrical Engineering, University of Illinois at Urbana-Champaign, 1985; M.S. Electrical Engineering, University of Illinois at Urbana-Champaign, 1980; B.S. Electrical Engineering, University of Notre Dame, 1977.

Professional Experience: Acting Dean, Office of Graduate Studies, 2007-present; Associate Dean, School of Engineering, 2003- present; Professor, Department of Electrical and Computer Engineering, University of New Mexico, 1998-present; Associate Professor, Department of Electrical and Computer Engineering, University of New Mexico, 1991-1998; Assistant Professor, Department of Electrical and Computer Engineering, University of New Mexico, 1985-1991; Joint Sandia National Laboratories/Univ. of New Mexico Professor, 1985-1988.

Areas of Current Research Interest: Engineering ethics, plasma processing of materials, diagnostics of low-pressure plasmas, plasma destruction of hazardous wastes, plasma deposition of thin film materials, solar photovoltaics, educational methods for engineering.

Honors and Society Memberships: Senior member, IEEE; member, American Society for Engineering Education; member, American Physical Society; former president, New Mexico Section of the Materials Research Society; member, Tau Beta Pi; member, Eta Kappa Nu.

Service: Editor in Chief, IEEE Transactions on Education 2007-present); Presenter of Engineering Ethics training for professional engineers, sponsored by New Mexico Society of Professional Engineering (NMSPE), 2006 to present.

Principal Technical Accomplishments: Measurements of species densities in high density plasma etch reactors, development of plasma etching techniques for ceramic thin films, development of thin film resistive ceramic coatings for suppression of vacuum breakdown, measurement of electron density dynamics in silane and methane gas discharges.

Publications: Over 50 publications in scientific and educational journals, and two textbooks.

Representative publications:

1. Charles Fleddermann, Engineering Ethics, 3rd edition, Pearson Prentice Hall, 2008.

2. Kirsty Mills and Charles Fleddermann, "Getting the Best from Nanotechnology: Approaching Social and Ethical Implications Openly and Proactively," IEEE Technology and Society Magazine, **24** (4), 18-26 (2005).

3. C. B. Fleddermann, "Engineering Ethics Cases for Electrical and Computer Engineering Students," IEEE Transactions on Education **43** (3), 284-287 (2000).

4. F. Liu and C. B. Fleddermann, "Electron Emission from Thin Film Ferroelectric Cathodes," Applied Physics Letters **76** (12), 1618-1620 (2000).

5. C. B. Fleddermann and G. A. Hebner, "Measurements of Relative BCl Density in BCl₃-containing Inductively-coupled rf Plasmas," Journal of Applied Physics **83** (8), 4030-4036 (1998).

6. G. A. Hebner and C. B. Fleddermann, "Characterization of Pulse-modulated Inductively Coupled Plasmas in Argon and Chlorine," Journal of Applied Physics **82** (6), 2814-2821 (1997).

7. G. A. Hebner, C. B. Fleddermann, and P. A. Miller, "Metastable Chlorine Ion Kinetics In Inductively Coupled Plasmas," Journal of Vacuum Science and Technology A **15** (5), 2698-2708 (1997).

8. H. R. Snyder and C. B. Fleddermann, "Decomposition of Hazardous Liquids in a Plasma Arcjet Reactor," IEEE Transactions on Plasma Science **25** (5), 1017-1022 (1997).

9. C. B. Fleddermann and G. A. Hebner, "Negative Ion Densities in Chlorine- and Boron Trichloride-containing Inductively-coupled Plasmas," Journal of Vacuum Science and Technology A **15** (4) 1955-1962, July/August 1997.

10. Charles B. Fleddermann, "Plasma Etching and Plasma Physics Experiments for the Undergraduate Microelectronics Course," IEEE Transactions on Education **40** (3), pp. 207-212, August 1997.