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EDUCATION

2001 to present **University of Arkansas** **Fayetteville, Arkansas**

- PhD Candidate, 4.0 GPA
- Expected date of graduation – May 2004

1998 to 2001 **University of Arkansas** **Fayetteville, Arkansas**

- Master of Science in Electrical Engineering, 3.7 GPA

1994 to 1998 **Hendrix College** **Conway, Arkansas**

- Bachelor of Arts in Physics (Liberal Arts Institution), 3.3 GPA
- Minor in Mathematics

Relevant Courses

Fundamental Physics I, II, & III, Modern Physics, Intermediate Mechanics, Intermediate Electricity and Magnetism, Quantum Mechanics I & II, Chemistry I & II, Synthesis of Physical Theories, Electronics I & II, Signal Processing, Systems and Signal Analysis, Electromechanical Energy Conversion, Microprocessor System Design, Power Electronics, Solid-State Electronics, Switch-Mode Power Conversion, IC Fabrication Technology, IC Fabrication Technology Laboratory, Power Distribution and Transmission, Advanced Electronic Packaging

EXPERIENCE

May 1999 to present **University of Arkansas** **Fayetteville, Arkansas**
Dept. of Electrical Engineering

GRADUATE ASSISTANT - PHD

Performed characterization and modeling of state-of-the-art Silicon Carbide (SiC) PiN, Schottky, and Merged-PiN-Schottky (MPS) power rectifiers, and vertical Doubled-implanted MOSFET (DiMOSFET) devices.

GRADUATE ASSISTANT - MSEE

Performed electrothermal finite element analysis of Silicon-on-Insulator (SOI) CMOS compatible thermal-based data isolators, or transducers for Jet Propulsion Laboratory (JPL). Developed over ten novel thermal transducers for low power, low speed data isolation in Systems-On-a-Chip (SoC).

May 2000 to present **National Institute of Standards** **Gaithersburg, Maryland**
and Technology (NIST)
Semiconductor Electronics Division

GUEST RESEARCHER

Characterized and modeled high power SiC power Schottky, Merged-PiN-Schottky, PiN diodes, and MOSFET devices for on-state, transient, and temperature dependencies.

Spring 2002 **University of Arkansas** **Fayetteville, Arkansas**
Dept. of Electrical Engineering

ELECTRONICS II INSTRUCTOR

Served as an instructor for a junior-level Electronics II course for one semester.

**June 1998 to
August 2001**

**Cargill, Inc.
Engineering Services Dept.**

Springdale, Arkansas

INTERN ELECTRICAL ENGINEER

Formed training program for technical employees.

1997 to 1998

**Hendrix College
Physics Department**

Conway, Arkansas

RESEARCH ASSISTANT

Constructed and analyzed 15-meter ring laser to monitor seismic waves. Presented findings at National Conference on Undergraduate Research and APS - AAPT joint meetings.

Constructed Gaussian surface, Tungsten plume probe, and noise reduction equipment to detect metal ions in rocket plumes and analyzed results.

PUBLICATIONS

T. McNutt, A. Hefner, A. Mantooth, J. Duliere, D. Berning, R. Singh, " Silicon-Carbide PiN, Schottky, and Merged PiN-Schottky Power Diode Models Implemented in the Saber Circuit Simulator," *Conf. Rec. of IEEE Power Electronics Specialists Conf (PESC)*, pp. 2103-2108, Vancouver, Canada, June 2001.

T. McNutt, A. Lostetter, A. Mantooth, M. Mojarradi, "A Novel SOI CMOS Compatible Thermal Device Technology," *Proceedings of THERMES 2002, Conference on Thermal Challenges in Next Generation Thermal Systems*, Santa Fe, NM, January 2002.

T. McNutt, A. Hefner, A. Mantooth, J. Duliere, D. Berning, R. Singh, "Parameter Extraction Sequence for SiC Schottky, Merged PiN Schottky, and PiN Power Diode Models," *Conf. Rec. of IEEE Power Electronics Specialists Conf (PESC)*, pp. 1269-1276, Cairns, Australia, June 2002.

T. McNutt, A. Hefner, A. Mantooth, J. Duliere, D. Berning, R. Singh, " Silicon-Carbide PiN, Schottky, and Merged PiN-Schottky Power Diode Models Implemented in the Saber Circuit Simulator," Accepted to the *IEEE Transactions on Power Electronics*, 2003.

T. McNutt, A. Hefner, A. Mantooth, D. Berning, S.H. Ryu, "Silicon Carbide Power MOSFET Model and Parameter Extraction Sequence," To be published in the *Conf. Rec. of 2003 IEEE Power Electronics Specialists Conf (PESC)*, Acapulco, Mexico, June 2003.

K. Speer, **T. McNutt**, A. Lostetter, A. Mantooth, D. Berning, A. Hefner, K. Olejniczak, "A Novel High Frequency Silicon Carbide, SIT-Based Test-Bed for the Acquisition of SiC Power Device Reverse Recovery Characteristics," To be published in the *Proceedings of the 2003 European Conference on Power Electronics and Applications*.

M. Hoque, D. Moorman, **T. McNutt**, J. Zhang, T. Ahmad, T. Cao, A. Mantooth, M. Mojarradi, "High Voltage Dickson Charge Pump in an SOI Process," to be submitted to the *IEEE Journal of Solid-State Circuits*, March 2003.

A. Hefner, D. Berning, **T. McNutt**, A. Mantooth, J. Lai, R. Singh, J. Palmour, " Characterization and Modeling of Silicon Carbide Power Devices," *Proceedings of the International Semiconductor Device Research Symposium (ISDRS) 2001*, pp. 568-571, Washington, D.C., December 2001.

HONORS & ACTIVITIES

- Hendrix College Physics Departmental Distinction 1998 – One of only four graduates with departmental distinction in physics.
- U of A Tech Summit Conference 2001 – Paper submission voted one of the top five papers at the conference.
- U of A Tech Summit Conference 2002 – Paper submission selected as second place in Prize Paper Competition.
- Member IEEE Power Electronics Society – *IEEE Transactions on Power Electronics* Reviewer
- Member IEEE Electron Devices Society

References are available upon request