



**D E S I G N
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**Frederick J. Porter, P.E.
Senior Engineering Consultant**

Professional Profile

Mr. Frederick J. Porter is a Senior Engineering Consultant in the Electrical Engineering Discipline at Design Research Engineering. He specializes in the analysis and design of residential, commercial, industrial, vehicular, and consumer electrical and electronic systems, including functional and manufacturing evaluation at the system, subsystem, and component level. Specific experience covers system design engineering, chassis electronic controller design, safety system analysis, worst-case circuit analysis (WCCA), and root cause analysis of electrical fires. He is familiar with the National Electric Code (NEC), the Standard for Electrical Safety in the Workplace (NFPA 70E), and the Guide for Fire and Explosion Investigations (NFPA 921). Mr. Porter's work has included electrical and electronics system compatibility testing and analysis, electronic controller design, and participation in various design standardization work.

Prior to joining Design Research Engineering, Mr. Porter was a Managing Engineer in Exponent's Electrical and Semiconductors Practice. He also spent 23 years in the automotive industry and 8 years in the computer manufacturing industry, holding various positions related to electrical and electronic system product design and manufacturing. In these positions, he was responsible for project management, Failure Mode and Effects Analysis (FMEA), Design Verification/Production Validation testing, process review and approval, team-oriented problem solving (TOPS), and cost analysis.

Academic Credentials and Professional Honors

M.S., Electrical Engineering, University of Michigan, 1975

B.S., Electrical Engineering, University of Michigan (*magna cum laude*), 1974

B.A., Mathematics and Physics, Albion College, 1974

Tau Beta Pi; Eta Kappa Nu, Engineering Honor Societies

Additional Education

SAE Introduction to Brake Control Systems: ABS, TCS, and ESC

SAE Side Impact Occupant Safety and CAE

SAE Vehicle Accident Reconstruction Methods

NFPA Seminar on National Electrical Code Essentials, NFPA 70-2008

NFPA Seminar on NFPA 70E, Standard for Electrical Safety in the Workplace

Vehicle Fire, Arson & Explosion Investigation Science & Technology Seminar

Licenses and Certifications

Licensed Professional Engineer, Colorado, #18611

Professional Affiliations

Member, Society of Automotive Engineers International (SAE)

Member, Institute of Electrical and Electronic Engineers (IEEE)

- Product Safety Engineering Society

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Patents

Patent 6,985,076 B1: Method and System for Detecting the Presence of a Spare Replacement in a Tire Pressure Monitoring System for an Automotive Vehicle, January 10, 2006 (with B. Bennie, L. Shah, T.M. McQuade and T.L. Miller).

Patent 6,982,636 B1: Method and System for Mitigating False Alarms in a Tire Pressure Monitoring System for an Automotive Vehicle, January 3, 2006 (with B. Bennie, D.B. Patel, L. Shah, T.M. McQuade and T.L. Miller).

Patent 6,952, 106 B1: Method and Apparatus for Identifying the Location of Pressure Sensors in a Tire Pressure Monitoring System, October 4, 2005 (with B. Bennie, L. Shah, R.P. Brombach, T.M. McQuade and T.L. Miller).

Patent 6,945,087 B2: Method and System for Calibrating a Tire Pressure Sensing System for an Automotive Vehicle, September 20, 2005 (with J.L. Rust, J. Tenbusch, T.M. McQuade and T.L. Miller).

Patent 6,750,762 B1: Method and System for Resetting Tire Pressure Monitoring System for an Automotive Vehicle, June 15, 2004 (with J.E. Blatchford and T.M. McQuade).

Patent 6,745,624 B2: Method and System for Calibrating a Tire Pressure Sensing System for an Automotive Vehicle, June 8, 2004 (with J.J. Rust, J. Tenbusch, T.M. McQuade and T.L. Miller).

Patent 4,876,536: Color Selectable Liquid Crystal Display System, September 19, 1989 (with R.A. Pidsosny).

Patent 4,703,198: Bi-Directional Data Transfer Circuit That is Directionally Responsive to the Impedance Condition of an Associated Input / Output Port of a Microcomputer, October 27, 1987 (with R. A. Pidsosny).

Patent 4,367,465: Graphics Light Pen and Method for Raster Scan CRT, January 4, 1983 (with N.P. Mati and R. W. Frederickson).

Publications

Porter, F.J., "Light Pen Aids User Interaction with Display" Hewlett-Packard Journal 1980; 10-14, 19 December.

Guest Lecturer

Lawrence Technological University, Biomedical Engineering Special Topics - Forensic Engineering, Southfield, Michigan, September 11, 2013

DRI Fire and Casualty Seminar, "Transforming Your Knowledge of Electrical Principles", Chicago, Illinois, November 4-5, 2010.

Product Liability Hot Topics Seminar for Defense Counsel, "Collision Avoidance Technology – New Technology Bringing A Host of New Claims", Troy, Michigan, September 2009.

Product Liability Hot Topics Seminar for Defense Counsel, "Tire Pressure Monitoring Systems", Troy, Michigan, September 18, 2008

Product Liability Hot Topics Seminar for Defense Counsel. "From Chassis Systems to Electronic Stability Control", with Henry Sleath, Troy, Michigan, February, 2008