

## **Snehal Dalal, Ph.D., P.E., CFEI** **Managing Engineer**

### **Professional Profile**

Dr. Snehal Dalal is a Managing Engineer in Exponent's Electrical Engineering and Computer Science practice. Dr. Dalal specializes in condition assessment techniques for electrical equipment. In his Doctorate's work at Arizona State University, he performed extensive research on identifying and quantifying degradation parameters of underground XLPE insulated distribution cables. This resulted in development of a new accelerating procedure for underground XLPE insulated cables for specific atmospheric conditions and an aging model, which uses feedback from actual field experience to gauge the future performance of the underground distribution cables.

At Exponent Dr. Dalal has performed safety evaluation of Li-ion rechargeable battery packs on handheld and notebook computers, portable audio devices, and other portable systems. Dr. Dalal has also investigated safety and reliability of computer power supply.

Prior to joining Arizona State University, Dr. Dalal worked as a Design Executive with L&T-Sargent & Lundy Ltd., where he performed engineering calculations using relevant IEEE standards. Dr. Dalal designed and successfully implemented a complete synchronization scheme for a power plant. He has also developed schematics for control and relay panels for unique remote synchronizing functions.

### **Academic Credentials and Professional Honors**

Ph.D., Electrical Engineering, Arizona State University, 2004

M.S., Electrical Engineering, Arizona State University, 2002

B.E., Electrical Engineering, M.S. University, India, 1997

Awarded three gold medals for excellence in academics from MSU, India in 1997

Ranked first in EE department for all four years during undergraduate study, 1993–1997

### **Licenses and Certifications**

Registered Professional Engineer, Arizona, #52534

Certified Fire and Explosion Investigator (CFEI) in accordance with the National Association of Fire Investigators (NAFI) National Certification Board

## **Languages**

Hindi, Gujarati

## **Publications**

Dalal S, Swart J, Pinnangudi P. CTIA IEEE 1625 Certification – An introduction. IEEE PSES Conference, San Diego, CA, October 10–12, 2011.

Pinnangudi B, Dalal SB, Medora NK, Arora A, Swart J. Thermal shutdown characteristics of insulating materials used in lithium ion batteries. IEEE Symposium on product compliance engineering, Boston, MA, October 2010.

Dalal S, Swart J, Pinnangudi B. IEEE 1725 and battery powered products. IEEE Symposium on Product Compliance Engineering, Toronto, Ontario, Canada, October 26–28, 2009.

Swart J, Dalal S. Constraint based product component safety evaluation. IEEE Symposium on product compliance engineering, Longmont, CO, October 2007.

Swart J, Edmonds J, Arora A, Dalal S. Case studies of electrical motor and generator failures. Failures 2007, South Africa, 2007.

Gorur RS, Dalal SB, Hensen P. Response of VLF insulators to lightning strokes. IEEE AP-S International Symposium and USNC/URSI National Radio Science Meeting, Washington D.C., July 2–8, 2005.

Dalal SB, Gorur RS, Dyer ML. Aging of distribution cables in service and its simulation in the laboratory. IEEE Transactions on Dielectrics and Electrical Insulation, June 2004.

Dalal SB, Gorur RS, Dyer ML. New aging model for 15kV cross linked polyethylene distribution cables. IEEE Conference on Electrical Insulation and Dielectric Phenomena, Boulder, CO, October 17–20, 2004.

Dalal SB, Gorur RS, Dyer ML. State estimation of insulation for 15kV cross linked polyethylene distribution cables. Presented at 8<sup>th</sup> International Conference on Probabilistic Methods Applied to Power Systems, Iowa State University, IA, September 13–17, 2004.

Dalal SB, Gorur RS, Dyer ML. Quantifying degradation of XLPE insulated distribution cable. Presented at IEEE Power Engineering Society (PES) general meeting, Denver, CO, June 6–10, 2004.

Gorur RS, Dalal SB, Dyer ML. Life prediction of underground distribution cables. Presented at IEEE Conference on Electrical Insulation and Dielectric Phenomena, October 2002.

## **Posters and Presentations**

Swart J, Dalal S. Subjecting cells to custom abused tests: What can we learn? The Battery Show 2011, October, 2011.

Dalal S. IEEE 1725 and IEEE 1625 Certification Programs. Battery Power 2011 Conference, Nashville, TN, September 20–21, 2011.

Swart J, Dalal S. Custom cell abuse testing – How were the tests performed? Advance Automotive Battery Conference, June 6–10, 2011.

Medora NK, Dalal S. Failure analysis – Selected case studies. IEEE PES Phoenix Chapter Technical Luncheon, January 20, 2011.

Dalal SB, Swart J. Your product's battery failed – What now? Battery Power Conference 2010, Dallas, TX, October, 2010.

Swart J, Dalal S, Pinnangudi B, Medora NK, Arora A. Lithium ion battery standards. 10<sup>th</sup> Annual International Advanced Automotive Battery Conference and Symposia, Orlando FL, May 17–21, 2010.

Dalal S, Swart J, Pinnangudi B. IEEE 1725 and cellular products. 5<sup>th</sup> Annual International Conference Lithium Mobile Power 2009, Boston, MA, November 12–23, 2009.

Dalal S. IEEE 1725 and Battery Powered Products. IEEE Symposium on Product Compliance Engineering, Toronto, Ontario, Canada, October 26–28, 2009.

Dalal SB. Constraint based product component safety evaluation. IEEE Symposium on product compliance engineering, Longmont, CO, October 2007.

Dalal SB. New aging model for 15kV cross linked polyethylene distribution cables. IEEE Conference on Electrical Insulation and Dielectric Phenomena, Boulder, CO, October 17–20, 2004.

Dalal SB. State estimation of insulation for 15kV cross linked polyethylene distribution cables. Presented at 8<sup>th</sup> International Conference on Probabilistic Methods Applied to Power Systems, Iowa State University, IA, September 13–17, 2004.

Dalal SB. Life prediction of underground distribution cables. Presented at IEEE Conference on Electrical Insulation and Dielectric Phenomena, October 2002.

## **Prior Experience**

Research Assistant, Arizona State University, 2000–2005  
Design Executive, L&T-S&L Ltd, India, 1997–2000

## **Professional Affiliations**

- Institute of Electrical and Electronics Engineers—IEEE
- National Association of Fire Investigators—NAFI