

## Prof. Dr.-Ing. Volker Hinrichsen

Born July 26, 1954 in Westerland/Sylt, Germany



### University Education

- 1982 "Dipl.-Ing." degree in Electrical Engineering from TU Berlin (High-Voltage Engineering, Electrical Power Systems, Electronics, Measuring Technology)
- 1990 "Dr.-Ing." degree; thesis in the field of MO surge arresters: "Simulation des elektrischen und thermischen Verhaltens von funkenstreckenlosen Metalloxid-Ableitern bei Betrieb an Wechselspannung"

### Professional Experience

- 1982 – 1989 Research Assistant at Institute of High-Voltage Engineering and Electrical Power Systems, TU Berlin (Prof. Peiser)
- 1989 – 1992 Test engineer, Siemens AG, PTD H, High-Voltage Laboratories, Schaltwerk Hochspannung, Berlin
- 1992 – 2001 Director R&D Surge Arresters, Siemens PTD H, Berlin
- August 2001- Full Professor (C4), TU Darmstadt, Department of Electrical Engineering and Information Technologies, Head of High-Voltage Laboratories

### Main fields of research

- Lightning and overvoltage protection in electrical power systems (lightning terminals, grounding systems, high-voltage surge arresters, energy handling and electrical aging of MO varistors)
- New insulation and field grading materials for high-voltage applications (application of functional fillers, direct voltage insulation systems)
- High-voltage circuit breakers (breaking performance of vacuum-breakers, switching of capacitive loads, condition monitoring, switching in high-temperature superconducting systems, breaking of direct currents, optimization of contact materials and geometries)
- Development of new sensors, diagnostic tools and condition monitoring in electrical power systems (surface acoustic wave sensors, arc rotation measurement on vacuum interrupters, field emission current measurement on vacuum breakers)
- High-voltage and high-current test and measuring technique (application of power semiconductors)

### Activities in Standardization

*IEC (International Electrotechnical Commission), Technical Committee TC37*

- TC 37 ("Surge Arresters"): Chairman
- TC 37 MT 4 ("Surge Arresters", responsible for all hv arrester standards): Convenor
- TC 37 MT 10 ("Arrester Application Guide"): Member
- TC 28 MT 9 ("Insulation Co-ordination – Application Guide"): Member

- "IEC1906 Award", 2007

#### *IEEE/SPDC (IEEE Surge Protective Device committee)*

- WG 3.3.11 ("Continuous Revision of Arrester Standard C62.11"): Member
- WG 3.3.13 ("Arrester Characterization and Testing"): Member
- WG 3.4.14 ("Revision of Arrester Application Guide C62.22"): Member

#### *DKE/VDE*

- K 441 ("Surge Arresters"): Chairman
- K 183 ("Qualification of Solid Insulating Materials/Systems"): Member
- K 451 ("Insulators"): Permanent Guest
- K 122 ("Insulation Coordination"): Member
- AK 124.0.3 ("High-Current Test Techniques"): Member
- Award "DKE-Nadel", 2012

#### **Other activities**

- DAK Cigré SC A3 (Deutscher Arbeitskreis) "High Voltage Equipment": Member
- Cigré WG D1.56 ("Field grading in electrical insulation systems"): Convenor
- Cigré WG C4.39 ("Effectiveness of line surge arresters for lightning protection of overhead transmission lines"): Mitglied
- Cigré WG D1.58 ("Evaluation of dynamic hydrophobicity of polymeric insulating materials under AC and DC voltage stress"): Member
- Cigré JWG D1/B3.57 („Dielectric Testing of gas-insulated HVDC systems“): Member
- VDV (Verband Deutscher Verkehrsunternehmen): Committee "Power Supply for railway systems": Member
- VDV Working Group "Overvoltage Protection of DC Railway Systems": Member
- FE/ZVEI (Forschungsvereinigung Elektrotechnik im Zentralverband Elektrotechnik- und Elektronikindustrie e.V.): Chair
- FE/ZVEI: Member of Research Association "Materials"
- ETG/VDE ("Energietechnische Gesellschaft"): Vice Chair from 2011 to 2013
- ETG/VDE: Expert Group Q2 „Materials, Insulation Systems, and Diagnostics“: Member
- TU Darmstadt Energy Center: Charter Member (member of the first board) and Member of the Team Electrical Engineering and Information Technology
- FTEI (Fakultätentag Elektrotechnik und Informationstechnik e.V.): Chair from May 2004 to May 2006, 2nd Vice Chair from May 2006 to May 2007, since May 2007 Head Finances
- Dean of Faculty of Electrical Engineering and Information Technology, TU Darmstadt, from 2006 to 2008
- Elected Member of the Senate of TU Darmstadt from 2012 to 2017

#### **Publications and Patents**

- Total number of publications: approx. 210 plus one monograph on surge arresters, published in several languages, currently in the 3<sup>rd</sup> edition
- Total number of patents: 17