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Foreword Special Section on Electrical Contacts

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Abstract:

Welcome to the Special Topics Section dedicated to the 2016 Holm Conference on Electrical Contacts. This special section contains eight high-quality papers that comprehensively describe the state of the art and potential future directions for topics of great interest to our readers. The Editor-in-Chief (EIC), in consultation with the other EICs, Associate Editors (AEs), and domain experts, selects the topics for the special sections, and a Guest Editor or AE (GE/AE), who is a leading expert in the technical area, then directs the solicitation and peer review of the papers. In cases where the GE/AE is also an author, the EIC is responsible for the peer review to avoid any real or perceived conflicts of interest.

Welcome to the Special Topics Section dedicated to the 2016 Holm Conference on Electrical Contacts. This special section contains eight high-quality papers that comprehensively describe the state of the art and potential future directions for topics of great interest to our readers. The Editor-in-Chief (EIC), in consultation with the other EICs, Associate Editors (AEs), and domain experts, selects the topics for the special sections, and a Guest Editor or AE (GE/AE), who is a leading expert in the technical area, then directs the solicitation and peer review of the papers. In cases where the GE/AE is also an author, the EIC is responsible for the peer review to avoid any real or perceived conflicts of interest.

This Special Topics Section focuses on new and emerging technologies in the electrical contacts area including advanced modeling, promising new contact materials for microelectromechanical systems switches, arcing phenomena modeling and simulation, and the effects of creep on radio frequency (RF) connectors.

The paper “A Finite-Element-Based Contact Resistance Model for Rough Surfaces: Applied to a Bilayered Au/MWCNT Composite” studies gold-coated multiwalled carbon nanotubes as a novel contact material for low-current switching applications.

The paper “Experimental Results of Constriction Resistance for Electrical Contacts Simulated Using Microfabrication” evaluates contact resistance in connectors using microfabricated test structures.

The paper “An Arc-to-Glow Transition Approach for Practical Use in DC Low-Power, Low-Voltage Electric Grids” investigates practical dc arcing phenomena important for low-power electrical grids.

The paper “Investigation on Contact Resistance Behavior of Switching Contacts Using a Newly Developed Model Switch” predicts long-term contact resistance behavior in specialized low-voltage connectors.

The paper “Experimental Study of Reignition Evaluators in Low-Voltage Switching Devices” studies reignition evaluators needed to improve low-voltage switching device switching performance.

The paper “Analysis of Arc Behavior in a Model Spark Gap After Surge Currents” evaluates switching arc behavior in spark gap devices where microsecond arcing times are prevalent.

The paper “Study on the Influence of Creep on RF Coaxial Switch in Accelerated Thermal Cycle Test” uses an accelerated thermal cycle test to evaluate RF coaxial switches.

The paper “Simulation of Arc Dwelling Behavior During Bridge-Type Contact Opening Process for High-Power Relay” develops models and simulates to evaluate the effects of break velocity arc dwelling.

We acknowledge all the authors who contributed papers and all the reviewers for their thorough reviews. We hope that this issue will serve as a valuable resource for the research community, as well as a catalyst for increased research and exploration in the exciting and far-reaching fields of electrical contacts.