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Special Issue on Plenary and Invited Papers From ICOPS 2010

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Special Issue on Plenary and Invited Papers From ICOPS 2010

THE 37th IEEE International Conference on Plasma Science (ICOPS) was held in Norfolk, VA, from June 20 to June 24, 2010. The technical program combined seven technical-related areas of plasma science and a range of diverse topics. A total of 562 abstracts from 37 countries were accepted, and the technical program included four plenary talks. There were 217 oral and 345 poster presentations. The plenary talks were given by Prof. L. Boufendi on Dusty Plasmas, Prof. E. Kunhardt on Non-Equilibrium Plasma Sources, Dr. K. S. Budil on High Energy Density Physics, and Dr. M. Thumm on the use of gyrotrons for ITER and fusion reactors. For the first time, ICOPS had a session on terahertz radiation and applications organized by Dr. B. Levush of NRL and two special sessions on the emerging field of Plasma Medicine, organized by Prof. M. Laroussi and Prof. M. Kong.

The research work presented at this conference showcased the latest progress in seven different areas. These included the following: 1) *basic processes in fully and partially ionized plasmas*; 2) *microwave generation and plasma interactions*; 3) *charged particle beams and sources*; 4) *high-energy-density plasma applications*; 5) *industrial, commercial, and medical plasma applications*; 6) *plasma diagnostics*; and 7) *pulsed power and other plasma applications*. Collectively, they represented a vast diversity ranging from intriguing plasmas formed at the tip of nanostructures, through very large scale fusion plasmas and system concepts. Applications were also wide ranging and included coherent light sources and flat-panel displays, surface modification and treatments, and plasma effects for medicine and biology. This Special Issue contains nine refereed papers representing a small collection of some of the most exciting presentations from ICOPS 2010.



Ravindra P. Joshi (M'83–SM'95–F'08) received the B.Tech. and M.Tech. degrees in electrical engineering from the Indian Institute of Technology, Bombay, India, in 1983 and 1985, respectively, and the Ph.D. degree in electrical engineering from Arizona State University, Tempe, in 1988.

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Prof. Joshi has been a Guest Editor for three Special Issues of the IEEE TRANSACTIONS ON PLASMA SCIENCE.

As Guest Editors, we would like to thank Dr. Steven Gitomer, the Editor-in-Chief of the IEEE TRANSACTIONS ON PLASMA SCIENCE, for his patience and vigilance as we worked to assemble this issue, and for his guidance and support. Our gratitude also goes to Assistant Publication Peer Review Support Specialist Sean Gillispie of the IEEE TRANSACTIONS ON PLASMA SCIENCE.

We also thank all authors who submitted manuscripts, thereby contributing to insightful and fundamental understanding of various issues pertinent to Plasma Science. Without their dedicated and skillful efforts, there would have been no Special Issue. Our thanks also go to all the reviewers. Their evaluation of the scientific merit of the manuscripts, helpful advice to the authors, their pleasant interactions with the Guest Editors, and their willingness to respond quickly to requests are really appreciated.

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He was an Assistant Professor with the Department of Mechanical Engineering, The University of Tokyo, for five years. He is currently a Research Associate with the University of California, Berkeley. His research interests include computational modeling and experimental studies of nonthermal atmospheric pressure plasmas, focusing on biomedical applications.



Xinpei Lu (M'06–SM'07) received the Ph.D. degree in electrical engineering from the Huazhong University of Science and Technology, Wuhan, China, in 2001.

From 2002 to 2006, he was with the Applied Plasma Technology Laboratory, Old Dominion University, Norfolk, VA, as a Research Associate. In 2007, he joined the Huazhong University of Science and Technology, where he is currently a Professor (Changjiang Scholar) with the College of Electrical and Electronic Engineering. His research interests include low-temperature plasma sources and their biomedical applications, modeling of low-temperature plasmas, plasma diagnostics, and pulsed-power technology. He is the author or coauthor of about 70 scientific articles in these areas.

Prof. Lu has served as a Guest Editor of the IEEE TRANSACTIONS ON PLASMA SCIENCE and as the Session Chair at the International Conference on Plasma Science for several years.