



We are pleased to continue the tradition of publishing the proceedings of the Carolus Magnus Summer Schools in this issue of *Transactions of Fusion Science and Technology: Proceedings of the Ninth Carolus Magnus Summer School on Plasma and Fusion Energy Physics*. We express our thanks to Dr. Dirk Van Eester (Chair); Dr. Ernesto Lerche (Scientific Secretary); and Dr. Roger Jaspers and Dr. Michael Lehnen (Program Committee), who helped coordinate the papers for the proceedings.

The proceedings from the past eight Carolus Magnus Summer Schools have been published in *Transactions of Fusion Technology*, **25**, 2T (1994); **29**, 2T (1996); **33**, 2T (1998); and **37**, 2T (2000); and *Transactions of Fusion Science and Technology*, **41**, 2T (2002); **45**, 2T (2004); **49**, 2T (2006); and **53**, 2T (2008). These proceedings have been used to supplement textbooks at various universities and as reference material by researchers in the field.

The Ninth Carolus Magnus Summer School on Plasma and Fusion Energy Physics took place from August 31 to September 11, 2009, in Herbeumont-sur-Semois, Belgium. The school was organized by the Trilateral Euregio Cluster under the auspices of EURATOM Associations: Laboratory for Plasma Physics, Ecole Royale Militaire-Koninklijke Militaire School, Brussels, Belgium; Institute for Energy Research/Plasma Physics, Forschungszentrum Jülich, Jülich, Germany; and FOM-Institute for Plasma Physics Rijnhuizen, Nieuwegein, The Netherlands. The aim of the school has been to provide PhD students and young researchers of the European Union and Associated States, as well as of other nations around the world, an opportunity to acquire a broad introduction to plasma physics and fusion energy research in magnetically confined plasmas, as well as the latest developments pursuant to the fusion power plant.

As evident from the lectures, the program of the summer school focuses on plasma and fusion energy physics ranging from basic plasma theory and fusion machines to diagnostics, fusion burn, and fusion reactor designs. Although there is some overlap of topical areas and lectures between the present proceedings and those of the past eight schools, the readers will find that the lecturers expanded coverage and incorporated new developments in the field. In addition, the present proceedings include new and expanded coverage on fusion energy physics related to ITER, plasma-wall interactions, fusion power plants, and fusion reactor materials. These proceedings should be useful to students engaged in PhD studies as supporting material and to young scientists requiring a well-documented and fairly complete view of the multifaceted field of plasma physics and fusion energy research.

We look forward to continuing this tradition for the Tenth Summer School in this series, to be held in 2011. We extend special appreciation to the sponsors for their support, the members of the organizing/program committee for assistance, and the lecturers for their work and cooperation in preparing and refining their lecture notes for publication. Our thanks to all who made it possible.

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