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Editor's Note: This issue of the International Journal of Applied Glass Science is a second in a planned series which engage internationally recognized authorities to serve as Guest Editors. We are especially pleased that Drs' Kathleen Richardson and Heike Ebendorff-Heidepriem accepted our invitation to organize this issue on *Glass and Photonics*, arguably one of the most important branches of glass science throughout the world. We extend sincere thanks to them for their care, diligence, and exceptional dedication in completing this task. We also extend our sincere thanks to the authors who committed their time and energy to bring this issue to completion.

Glass and Photonics — an Overview

Kathleen Richardson and Heike Ebendorff-Heidepriem

Glass is a key host material that has been shown suitable for the creation of a diverse range of passive and active photonic devices. The growing interest in developing glass materials with new functionalities which further advance both established and novel glass compositions is demonstrated by the continued growth of articles related to optical glass and glasses for photonics. This special issue aims to fill the niche by highlighting recent works on fundamental glass science and the application of glassy materials to photonic components, devices and potential system integration. The

articles span the development of novel glass materials such as lanthanum-aluminium-silicate glasses and multi-material fibers, the creation of advanced functionalities in glasses by exploiting thermal poling and laser inscription as well as the generation of new integrated optics based on tellurite glass and quantum cutting in glass materials. The articles review the state-of-the-art in glass science and technology advancement in the respective topic areas and conclude with projections for future research needs, unresolved technical challenges, and other pertinent opportunity areas.



Kathleen Richardson is currently Professor of Optics and Materials Science and Engineering at CREOL/the College of Optics and Photonics at the University of Central Florida, where she runs the Glass Processing and Characterization Laboratory (GPCL), carrying out design, synthesis and characterization of novel glass and glass ceramic materials for infrared optical applications. Prof. Richardson is a recog-

nized expert in infrared optical glass science and engineering, examining the role of structure/property relationships on resulting optical function and performance in bulk, planar and fiber optical materials. She has numerous industrial and government supported research programs evaluating materials for precision molded optics, the investigation of non-oxide glasses in integrated on-chip chem-bio planar sensors, and the development of novel nano-composites for advanced imaging and detection applications. Dr. Richardson is a fellow of ACerS, SPIE, OSA and the SGT, and has served as a past and current Director on the Boards of the American Ceramic Society and SPIE, respectively.



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Heike Ebendorff-Heidepriem is one of the leaders of the Optical Materials & Structures Theme at the Institute for Photonics & Advanced Sensing at The University of Adelaide, Australia. She has a long track record in glass chemistry and technology. She was awarded the Woldemar A. Weyl Inter-

national Glass Science Award and a prestigious EU Marie Curie Individual Fellowship in 2001. She currently serves as Associate Editor of the International Journal of Applied Glass Science. Her research focuses on the development of mid-infrared, high-nonlinearity and active glasses; glass, preform and fibre fabrication techniques and surface functionalization of glass. Her research has generated over 100 refereed journal papers and conference proceedings.