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Cornelius F. Hahlweg
Joseph R. Mulley
Editors

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Introduction

This proceedings volume features papers presented at the twenty-second annual conference for Novel Optical Systems, Methods, and Applications held in San Diego, California, this year. The conference included a two-day program with technical sessions dedicated to: Novel Optical Instrumentation and Methods; Novel Optical Design, Optimization, and Modelling; Hyperspectral, Thermal, and Polarization Applications; Biomedical Applications; and Photonics. In addition, there was a poster session.

Some highlights from the two sessions on Novel Optical Design, Optimization, and Modelling, chaired by G. Groot Gregory (Synopsys, Inc.) and Stephan Fahr (JENOPTIK Optical Systems, GmbH), included an interesting invited paper on deep neural network models used for thin-film design and another which used differential evolution for optimizing optical architectures. In the Hyperspectral, Thermal, and Polarization Applications session, chaired by Craig Olsen (L-3 Sonoma EO), there was a presentation which demonstrated the benefits of applying cross-disciplinary principles to optical thermal modelling. R. Hamilton Shepard (Waymo, LLC) chaired the Biomedical Applications session which included topics featuring novel approaches for super resolution using nano LEDs as well as bedside sepsis diagnostics. Finally, there were two Photonics sessions, one of which included an interesting work on all-optical logic gates used for optical circuits.

Our thanks go to all the speakers and authors who made this conference an enjoyable and interesting event. We are very grateful to those who helped make this conference a success, especially the SPIE staff, the program committee, and the interested audience members, who spared no effort to keep the discussion going.

The program committee provided excellent assistance to ensure quality of content while also presiding over several sessions. Thank you for keeping our conference running smoothly and on time. Also, thanks to everyone else on our program committee who helped review the abstracts and manuscript submissions: Francois Callewaert, Joseph Choi, Arthur Davis, Peter Goldstein, Eric Herman, John Koshel, Sara Madaan, Bharathwaj Narasimhan, José Sasián, Hayin Sun and Udo Zölzer.

Next year we will return for our twenty-third conference. The chairs will be Cornelius Hahlweg and Joseph Mulley. We look forward to seeing you in 2020!

Cornelius F. Hahlweg
Joseph R. Mulley

