2012 Optics+Photonics
12–16 August 2012

Technical Program
spie.org/op12

Location
San Diego Convention Center
San Diego, California, USA

Conferences and Courses
12–16 August 2012

Exhibition
14–16 August 2012

Technologies
- NanoScience+Engineering
- Solar Energy+Technology
- Organic Photonics+Electronics
- Optical Engineering+Applications
Reflection, Scattering, and Diffraction from Surfaces III

Conference Chair: Leonard M. Hanssen, National Institute of Standards and Technology (USA)

‘Program Committee: Gérard Berginc, Thales Optronique S.A. (France); Andrea M. Brown, The Johns Hopkins Univ. Applied Physics Lab. (USA); Michael G. Dittman, Ball Aerospace & Technologies Corp. (USA); Aristide C. Dogariu, CREOL, The College of Optics and Photonics, Univ. of Central Florida (USA); John C. Fleming, Ball Aerospace & Technologies Corp. (USA); Greg Gbur, The Univ. of North Carolina at Charlotte (USA); Hsueh-Mei W. Graham, Lockheed Martin Aeronautics Co. (USA); Brian G. Hoover, Advanced Optical Technologies (USA); Danhong Huang, Air Force Research Lab. (USA); Alexei A. Maradudin, Univ. of California, Irvine (USA); Richard N. Pfisterer, Photon Engineering LLC (USA); Arne Roos, Uppsala Univ. (Sweden); Hendrik Rotte, Helmut-Schmidt Univ. (Germany); Shouhong Tang, KLA-Tencor Corp. (USA); Benjamin K. Tsai, National Institute of Standards and Technology (USA)
Portable systems could be realized with as little as a laptop with web cam, of this emerging discipline. Problems yet to solve. Interferometrists looking for solutions (or picking on the weaknesses of deflectometry) are also invited. We are hoping to get an idea of where we are, where the gaps and show-stoppers are, and come up with a roadmap for technical development and industrial implementation that we could use to set up meaningful collaborations and develop the full potential of this emerging discipline.

Large or very large optical components, aspherics, and freeform optics have proven very difficult and expensive to measure with interferometry. The need has become apparent to complement (and sometimes even replace) interferometry with a technique that is more versatile and less sensitive to misalignments. Simply and inexpensively measuring the distortion of a large or very large optical component, aspherics, and freeform optics that has proven very difficult and expensive to measure with interferometry. From Titanic to the Tiny: Three Decades of Underwater Optical Imaging

Jules S. Jaffe, Scripps Institution of Oceanography (USA)

Further panelists to be confirmed.

Methods and Applications of Deflectometry

Date: Tuesday 14 August. Time: 8:00 to 10:00 PM Room: Marriott Hotel, Oceanside

Moderators:
Peng Su, College of Optical Sciences, The Univ. of Arizona (USA); Jan Burke, Bremer Institut für angewandte Strahltechnik (Germany)

Panelists:
Christian Faber, Univ. Erlangen-Nuremberg (Germany); Robert E. Parks, College of Optical Sciences, The Univ. of Arizona (USA)

Further panelists to be confirmed.

Wednesday 15 August

SESSION 4

Scattering Theory II

Session Chair: Alexei A. Maradudin, Univ. of California, Irvine (USA)

8:40 am: Estimating hemispherical scatter from incident plane measurements of isotropic samples (Invited Paper), John C. Stover, The Scatter Works Inc. (USA); Sven Schroeder, Angela Duparré, Alexander von Finck, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany)

9:10 am: A BRDF model for scratches and digs, Gary L. Peterson, Breault Research Organization, Inc. (USA)

9:30 am: Wavelength-dependent resonant surface-plasmon mediated light scattering by a slit array filled with different dielectrics, Danhong Huang, Air Force Research Lab. (USA)


10:10 am: Coherence model for laser and solar scattering from diffuse metals, Brian G. Hoover, David E. Talianfero, Advanced Optical Technologies (USA); L. David Wellens, David L. Bowers, Applied Technology Associates (USA)

Coffee Break

SESSION 5

Measurement Instrumentation and Applications I

Session Chair: Hsueh-Mei W. Graham, Lockheed Martin Aeronautics Co. (USA)

11:00 am: BRDF measurements using a tunable supercontinuum fiber laser source designed for the STARR II gonioreflectometer, Heather J. Patrick, National Institute of Standards and Technology (USA); Clarence J. Zaroblia, Jung Research and Development Corp. (USA) and National Institute of Standards and Technology (USA); Thomas A. Germer, Catherine A. Cooksey, Benjamin K. Tsai, National Institute of Standards and Technology (USA)

11:20 am: Quantification of the systematic and random measurement uncertainty of a polarimetric scatterometry system designed for enhanced e-field device characterization, Thomas M. Fitzgerald, Univ. of Dayton Research Institute (USA); Michael A. Marciniak, Air Force Institute of Technology (USA); Stephen E. Nauyoks, Air Force Institute of Technology (USA)

11:40 am: Scatterometer basing on a STAR GEM idea for optical measurements of micro-lenses, Etsuo Kawate, National Institute of Advanced Industrial Science and Technology (Japan); Miroslav Hain, Institute of Measurement Science (Slovakia); Fumiko Hiwatashi, Systems Engineering Inc. (Japan)

12:00 pm: The Southwest Research Institute Ultraviolet Reflectance Chamber (SwURC): a far ultraviolet reflectometer, Gregory S. Winters, Kurt D. Retherford, Michael W. Davis, Stephen M. Escobedo, Edward L. Patrick, Eric Bassett, Maggie E. Nagengast, Matt H. Fairbank, Paul F. Miles, Joel W. Parker, Randall Gladstone, Alan Stern, Southwest Research Institute (USA)