

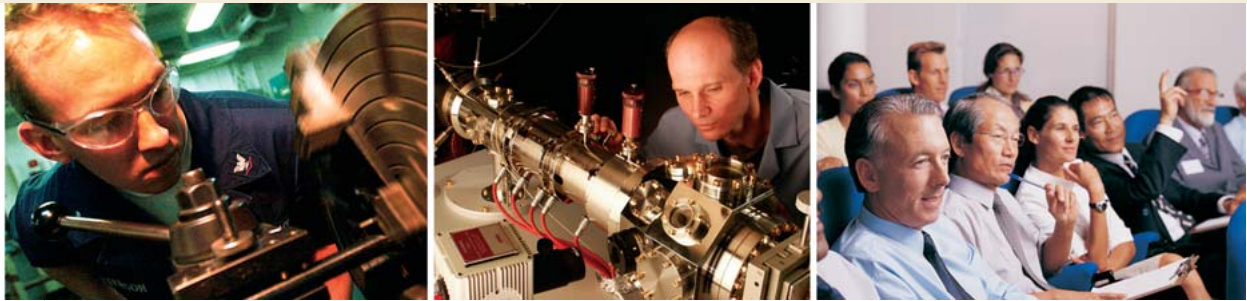
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SPIE Europe 
Optical Systems Design

2-5 September 2008

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- ▶ **Optical Design and Engineering**
- ▶ **Advances in Optical Thin Films**
- ▶ **Detectors and Associated Signal Processing**
- ▶ **Optical Fabrication, Testing, and Metrology**
- ▶ **Nonimaging Optical Design**

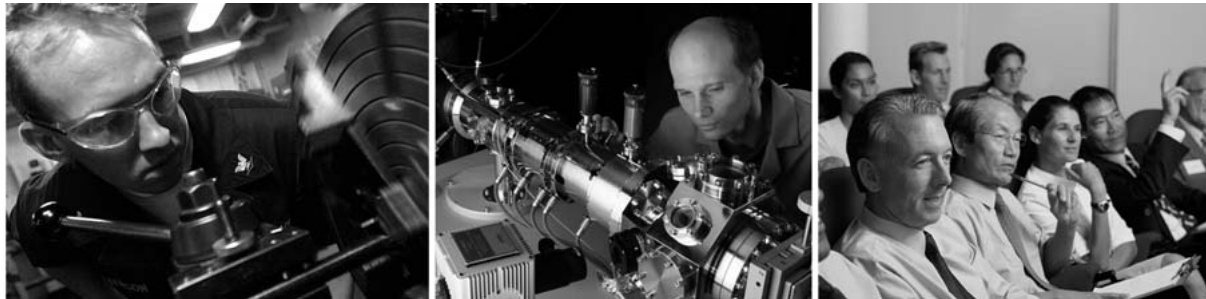
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Left cover photo: U.S. Navy photo by Petty Officer 2nd Class Zack Baddorf. Night Sight Holes. U.S. Navy Petty Officer 3rd Class William Peterson bores holes for night vision goggle test equipment aboard the amphibious assault ship USS Peleliu under way in the Pacific Ocean off the coast of Southern California, Dec. 2, 2005.

Center cover photo: Courtesy of Pacific Northwest National Laboratory. A Pacific Northwest National Laboratory scientist uses a photoemission electron microscope (PEEM) to study carrier dynamics and defect formation in single crystal iron oxide (hematite) thin films. These films mimic naturally occurring materials that are found in both geochemical and astrophysical environments.

Your input is crucial

Optical instruments are addressing an ever-increasing number of industrial and research applications: imaging and vision, defence, space, telecommunications, transportation, industrial process control, laser fusion, etc. As users are expecting more demanding performances, optical systems designers and manufacturers are faced with growing challenges.

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David M. Williamson, West Malvern (United Kingdom); NRCA Fellow, Nikon Research Corporation of America USA



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Optical Design and Engineering (OSD01)

Conference Chairs: **Laurent Mazuray**, EADS Astrium (France); **Rolf Wartmann**, Carl Zeiss MicroImaging (Germany); **Andrew Wood**, Qioptiq (United Kingdom)

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Efficient and successful optical design requires a multidisciplinary approach. The optical designer needs to have material and production know-how, and knowledge of the application and potential market, in addition to considerable ability in its main task - the design of an optical system with optimum performance. Advanced optical systems require a clear understanding of the physical limits, material science, and technical possibilities. Only then will the result be a competitive product optimised for best value for money. In many cases the success of a product in the international marketplace depends on its optical design.

New types of optical elements, such as DOEs and HOEs, active and adaptive elements, nonlinear elements, integrated optical elements, new tools for illumination, or micro-optical components find their way into new products. The design software tools have to keep pace with the research and development activities in these new technologies.

This conference is intended to address an international audience of optical system designers, software development engineers, and R&D experts from industry, institutions, and academia.

Original papers are solicited on, but not limited to, the following areas of research, design, and engineering of optical systems:

- modelling, simulation and new algorithms
- optomechanical design
- stray light analysis and prevention
- super resolution systems
- space optics
- x-ray optics
- active and adaptive optics
- integrated and guided optics
- micro-optics
- optics for visual instruments
- optics/detector interface
- advanced optical materials
- diffractive and holographic optics
- high-power designs using nonlinear elements
- environmental effects on optics and their compensation
- projection and display systems
- microscopy
- optical systems for microlithography.

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Advances in Optical Thin Films III (OSD02)

Conference Chairs: **Norbert Kaiser**, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); **Michel Lequime**, Institut Fresnel (France); **H. Angus Macleod**, Thin Film Ctr., Inc.

Program Committee: **Claude Amra**, Institut Fresnel (France); **Salvador Bosch Puig**, Univ. de Barcelona (Spain); **Bertrand G. Bovard**, Teledyne Scientific Co.; **Mireille Commandré**, Institut Fresnel (France); **Angela Duparré**, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); **Keith L. Lewis**, Electromagnetic Remote Sensing Defence Technology Ctr. (United Kingdom); **Xu Liu**, Zhejiang Univ. (China); **Ludvik Martinu**, École Polytechnique de Montréal (Canada); **Angela M. Piegari**, ENEA (Italy); **Guillaume L. Ravel**, CEA LITEN (France); **Carl G. Ribbing**, Uppsala Univ. (Sweden); **Detlev Ristau**, Laser Zentrum Hannover e.V. (Germany); **Ulrike Schulz**, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); **Christopher J. Stolz**, Lawrence Livermore National Lab.; **Hrvoje Zorc**, Institut Ruđer Bošković (Croatia)

Optical thin films are today involved in numerous optical systems where they constitute a key to their ultimate performance. For most applications, high accuracy is required on both the optical and non-optical properties, including low-loss energy balance, mechanical and thermal behaviour, laser damage threshold and non-linear properties. Great progress has been made in almost all aspects but there are still problems and barriers to progress and their identification and possible solutions represent important features of this conference.

The conference will be devoted to Thin Film Optical Coatings, with special emphasis on the latest developments in the field. Papers on theoretical, experimental, and technological aspects will cover both fundamental and applied research, as well as development, practical techniques and applications.

We welcome papers describing advances in any aspect of thin film optical coatings and especially in the following areas:

- optical coatings on organic materials
- coatings for ultrafast optics
- optical coatings for displays
- optical thin films for microcomponents
- optical coatings for the DUV/VUV
- coatings for EUV/soft x-ray mirrors
- thin film growth and microstructure
- design of optical coatings
- optical coating materials
- film deposition methods
- large area deposition
- characterisation and monitoring
- mechanical stress in optical coatings
- metal films: islands, semitransparent, mirrors
- laser resistant coatings
- tunable thin film coatings
- patterned coatings and thin-film arrays
- 1D photonic crystals and metamaterials.

Detectors and Associated Signal Processing (OSD03)

Conference Chair: **Jean-Luc Tissot**, ULIS (France)

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Optical Fabrication, Testing, and Metrology (OSD04)

Conference Chairs: **Angela Duparré**, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); **Roland Geyl**, SAGEM SA (France)

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Today's optical fabrication technologies are facing ever-increasing demands from industry and research. This is driven by tough requirements for cost and time reduction in production and R&D as well as by rapidly developing and new application fields. Large and complex surfaces and the enormous progress of nanotechnologies in optics are just two examples. These challenging developments crucially impact the nature of testing and metrology tools as well as the way the tools are deployed. High accuracy testing procedures for ever-smaller features e.g. are needed just as much as methods for fast and efficient coverage of large application areas. All these efforts are directed to strengthen the efficiency in numerous fields such as industry, science and consumer optics.

The aim of this conference is to review the latest developments achieved in optical fabrication, testing and metrology. To address these, contributions are sought from the following and related fields:

- large, mini- and micro- optics fabrication
- aspheric and complex optical surfaces
- polishing, grinding, lapping and cutting
- ultraprecision manufacturing (diamond turning etc.)
- nanostructuring of multifunctional optical surfaces
- novel surface finishing techniques
- optical shop and the environment
- computer integrated manufacture and automation
- rapid surface processing
- exotic or difficult material processing
- figure, mid and high spatial frequencies measurement
- scanning probe techniques
- nano- and microroughness measurement
- light scatter techniques and analysis
- texture and subsurface damage testing
- interferometry and holography
- speckle photography, shearography and ESPI
- optical metrology at Extreme UV wavelengths
- coated surface testing
- surface cleanliness testing
- complete system testing
- novel or specialized testing techniques
- relative and absolute accuracy
- standardization in optical metrology.

Non-Imaging Optical Design (OSD05)

Conference Chairs: **Tina E. Kidger**, Kidger Optics Associates (United Kingdom); **Stuart R. David**, Optical Research Associates

Program Committee: **Pablo Benítez**, Univ. Politécnica de Madrid (Spain); **William J. Cassarly**, Optical Research Associates; **R. John Koshel**, College of Optical Sciences/Univ. of Arizona and Lambda Research Corp.; **Juan C. Miñano**, Univ. Politécnica de Madrid (Spain); **Julius A. Muschaweck**, OSRAM Opto Semiconductors GmbH (Germany); **Andreas L. Timinger**, Optics and Energy Concepts AG (Germany); **Teus W. Tukker**, Philips Lighting B.V. (Netherlands)

The topic of illumination systems is as 'old as the hills,' but there has been a recent resurgence in illumination R&D. This resurgence has been driven by new sources (e.g., solid state sources, organic sources, light-emitting polymers, and high luminance discharge sources) and advances in fabrication technologies (e.g., diamond turning of complex surfaces and advanced molding of complex patterns and structures). In addition, several optical design software companies have developed, and continue to develop and improve, sophisticated illumination modeling and optimization tools to aid the illumination design engineer. This conference offers a European podium for the discussion of these ongoing illumination R&D activities.

Papers are solicited on all matters pertaining to modern illumination design, including, but not limited to, the following areas:

- illumination optimization
- light transport
- LED source modeling and coupling and applications
- illumination system modeling
- information display design
- transportation systems illumination.

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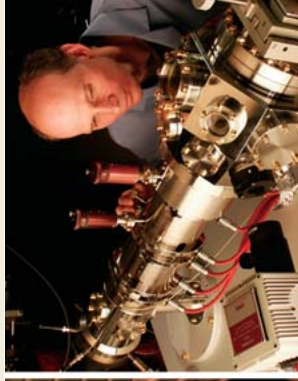
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