



2018 **MRS**[®]
FALL MEETING & EXHIBIT
 November 25–30, 2018 | Boston, Massachusetts
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CALL FOR PAPERS
 Abstract Submission Opens—May 14, 2018
 Abstract Submission Deadline—June 14, 2018
 REMINDER: In fairness to all potential authors, late abstracts will not be accepted.

Symposium EP07: Tailored Disorder—Novel Materials for Advanced Optics and Photonics

Disorder and perturbed periodicity in materials are in the process of becoming a vital research area that has started to show that optical media do not necessarily have to be regular. Photonic materials with deliberately introduced disorder in their respective geometries and compositions show interesting novel and tunable unforeseen properties.

So far, countable scientific achievements have been reported in the areas of biology, materials science, nano-optics and -photonics that, however, already point towards a wealth of interesting effects with several applicative dimensions. This notion could be derived from the finding of structural disorder being often beneficial in nature and being useful as an engineering guide for the development of novel advanced optics and photonics devices.

The general subject of structural disorder is rapidly emerging into an area of interdisciplinary scientific interest, which is however still in its infancy. Therefore, the purpose of this symposium is to bring together specialists from various scientific communities such as physics, biology and materials science and engineering to advance the structural disorder research area based on fundamental and applied research with emphasis on multidisciplinary approaches and fabrication routes. Contributions from the fields of theoretical, applied and computational physics, optics and photonics in biology, materials engineering and nano-patterning are encouraged.

The development of novel approaches and design routes to realize tailored disorder in materials will be one of the main topics of the symposium. Presentations might include various patterning procedures including etching techniques, replica moulding, self-assembly, sol-gel procedures, solid state synthesis, soft lithography, layer-by-layer deposition with the focus on materials functions and properties.

Topics will include:

- Materials science and engineering of disorder
- Fabrication approaches and design routes to materials with tailored disorder
- Wavefunction manipulation (photons, plasmons)
- Localization and focusing of light (Anderson localization)
- Random scattering and lasing
- Optics and photonics in biological systems

Invited speakers include:

Luca Dal Negro	Boston University, USA	Ullrich Steiner	Adolphe-Merkle-Institute, Switzerland
Marian Florescu	Surrey University, United Kingdom	Salvatore Torquato	Princeton University, USA
Satoshi Iwamoto	University of Tokyo, Japan	Willem Vos	University of Twente, Netherlands
Wieslaw Krolikowski	Australian National University, Australia	Martin Wegener	Karlsruhe Institute of Technology, Germany
Jordi Martorell	Institute of Photonics, Spain	Diederik Wiersma	European Laboratory for Non-linear Spectroscopy, Italy
Mordechai Segev	Physics Department and Solid State Institute, Israel		

Symposium Organizers

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Keywords for Abstract Submission

Anderson Localization, Bioinspired Materials, Biological Systems, Disordered Materials, Electromagnetic Wave Manipulation, Random Lasing