

Special Issue on
Optical Properties of Disordered Media

CALL FOR PAPERS

Complex disordered media are ubiquitous around us, from biological tissues of animals and plants to paints and cosmetics, fog, atmospheric clouds, and interstellar dust. The microscopic-scale inhomogeneity in such media scrambles the propagating light by multiple scattering, thereby limiting the penetration depth of optical imaging and light delivery methods. Thanks to its richness in physical concepts and high technological potential, the study of light propagation in disordered media is a long-standing, yet very active research field. It is now well admitted that pushing the knowledge frontier on fundamental aspects of light interaction with disordered media can spark the development of innovative optical techniques. The examples are recently developed methods for deep tissue stimulation and imaging, imaging through the walls or around the corners, and so forth.

Recent advances in the field of micro- and nanophotonics have shown that disorder could be exploited to improve the performance of certain optical devices, such as thin-film photovoltaic cells or on-chip spectrometers, or even to create materials exhibiting new useful optical features. Scientists started to see scattering in disordered media not as impediment, but as an aid to focus, shape, and compress waves, thereby offering many new perspectives in light management and optical imaging. One of the examples is the random laser, where multiple scattering of light in an amplifying disordered structure is used as a feedback mechanism. Although disordered materials are easy to fabricate, it is only recent that researchers have started to fully understand the rich and complex physical processes taking place therein.

In this special issue, we invite researchers to submit original papers as well as review articles that will stimulate the continuing efforts on the understanding of fundamental aspects of light propagation in scattering media and on uncovering the new properties and functionalities of disordered photonic structures.

Potential topics include but are not limited to the following:

- ▶ Focusing and imaging through random media
- ▶ Optical properties of biological tissues, deep tissue stimulation and imaging
- ▶ Light harvesting in disordered photonic structures
- ▶ Mesoscopic optical phenomena and Anderson localization
- ▶ Correlated disordered media
- ▶ Random lasers

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/ijo/opdm/>.

Lead Guest Editor

Sergey Sukhov, University of Central Florida, Orlando, USA
ssukhov@creol.ucf.edu

Guest Editors

Jacopo Bertolotti, University of Exeter, Exeter, UK
j.bertolotti@exeter.ac.uk

Ke Si, Zhejiang University, Hangzhou, China
kesi@zju.edu.cn

Kevin Vynck, French National Centre for Scientific Research (CNRS), Bordeaux, France
kevin.vynck@institutoptique.fr

Basil T. Wong, Swinburne University of Technology Sarawak Campus, Kuching, Malaysia
twong@swinburne.edu.my

Manuscript Due

Friday, 25 November 2016

First Round of Reviews

Friday, 17 February 2017

Publication Date

Friday, 14 April 2017