



HAL
open science

Preface on laser material interactions: From basic science to industrial applications (LaserMaterInter2020)

Peter Schaaf, Catalin Constantinescu, Andreea Matei

► To cite this version:

Peter Schaaf, Catalin Constantinescu, Andreea Matei. Preface on laser material interactions: From basic science to industrial applications (LaserMaterInter2020). Applied Surface Sciences Advances, 2021, 6, pp.100133. 10.1016/j.apsadv.2021.100133 . hal-03432577

HAL Id: hal-03432577

<https://hal.science/hal-03432577>

Submitted on 20 Apr 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial - NoDerivatives 4.0 International License



Contents lists available at ScienceDirect

Applied Surface Science Advances

journal homepage: www.sciencedirect.com/journal/applied-surface-science-advances

Preface on laser material interactions: From basic science to industrial applications (LaserMaterInter2020)

This special issue covers all the new advances in laser-matter interaction coupled with recent applications of emerging materials, their fabrication and applications. The main objective is to update the basic phenomena involved in the interaction of the wide range of laser systems, where still new and efficient devices including smart optics, high and low repetition rate processing as well as high and low beam fluences come up regularly. The symposium considers recent progress in laser-assisted additive fabrication (SLS, SLM), laser and intense light applications in printed electronics, laser-based nanofabrication, nano-LIPSS formation, laser lift of biological materials and systems and more emerging techniques such as laser synthesis of nanoparticles in liquids. Thus, it offers a unique opportunity for researchers from Europe and around the world to discuss their results in a friendly, interactive and engaging atmosphere.

Laser techniques are already facilitating environmental and eco-friendly designs through to the useful processing of photovoltaic cells, photocatalytic materials, thermoelectric materials and devices, micro- and nano-systems for energy storage and conversion. Special attention is paid to these “hot” topics. Contributions on laser interaction with hard, soft and intelligent materials, targeting future applications from nano-energy to biomedicine as well as recent advances in fundamental mechanisms are a highlight. The “Laser Material Processing: From fundamental interactions to innovative applications (LaserMaterInter2020)” provides a platform to establish interdisciplinary international research collaborations between scientists working in the field of laser-matter interaction.

Guest Editors of the Special Issue “Laser Material Processing: From fundamental interactions to innovative applications (LaserMaterInter2020)”

Prof. Dr. Peter SCHAAF, TU Ilmenau, Germany



Dr. Catalin-Daniel CONSTANTINESCU, CNRS, LP3 / UMR 7341, France



Dr. Andreea MATEI, National Institute for Lasers, Plasma and Radiation Physics, Romania



Peter SchAAF^{a,*}, Catalin Constantinescu^b, Andreea Matei^c

^a TU Ilmenau, Institute of Materials Science and Engineering and Institute of Micro and Nanotechnology MacroNano®, Gustav-Kirchhoff-Strasse 5, D-98693 Ilmenau, Germany

^b CNRS, Laboratoire LP3 - UMR 7341, Aix-Marseille University, Campus de Luminy, Case 917, F-13288 Marseille, France

^c Plasma and Radiation Physics, Lasers Department, National Institute for Lasers, 409 Atomistilor Street, RO-077125 Magurele-Bucharest, Romania

* Corresponding author.

E-mail address: peter.schaaf@tu-ilmenau.de (P. SchAAF).

<https://doi.org/10.1016/j.apsadv.2021.100133>

Available online 7 July 2021

2666-5239/© 2021 The Author(s).

Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).