

Cambridge University Press

978-1-605-11342-5 - Materials Research Society Symposium Proceedings Volume 1365:

Laser-Material Interactions at Micro/Nanoscales

Edited by Yongfeng Lu, Craig B. Arnold, Costas P. Grigoropoulos, Michael Stuke and Steven M. Yalisove

Table of Contents

[More information](#)

CONTENTS

Preface ix

Materials Research Society Symposium Proceedings..... xi

ULTRA-FAST LASER PROCESSING

- * **Transient Localized Material Properties Changes
by Ultrafast Laser-pulse Manipulation of Electron
Dynamics in Micro/Nano Manufacturing..... 3**
Xin Li, Lan Jiang, Cong Wang, and Hai-Lung Tsai
- * **Nanomorphing with Ultrafast Lasers
and Biomedical Applications** 9
Alan J. Hunt
- * **Laser Direct Writing of Nanocompounds..... 19**
Andreas Ostendorf, M'Barek Chakif,
and Qingchuan Guo
- * **Nonlinear Micro-processing of Silicon by Ultrafast
Fiber Laser at 1552 nm** 31
Yoshiro Ito, Rie Tanabe, and Kozo Tada

Ultrafast Laser Processing of Hybrid Micro- and Nano-structures in Silicate Glasses 43

Pavel Mardilovich, Luke Fletcher, Neil Troy,
Lihmei Yang, Huan Huang, Subhash Risbud,
and Denise M. Krol

Ultra-fast Photoluminescence in Fused Silica Surface Flaws Susceptible to Laser Damage 49

Ted A. Laurence, Jeff D. Bude, and Nan Shen

LASER ABLATION AND DEPOSITION, AND SURFACE MODIFICATION

- Metal and Metal-oxide Nanoparticle Synthesis
by Laser Ablation of Aqueous Aerosols..... 57**
Kristofer L. Gleason, John W. Keto,
Desiderio Kovar, and Michael F. Becker

*Invited Paper

Cambridge University Press

978-1-605-11342-5 - Materials Research Society Symposium Proceedings Volume 1365:

Laser-Material Interactions at Micro/Nanoscales

Edited by Yongfeng Lu, Craig B. Arnold, Costas P. Grigoropoulos, Michael Stuke and Steven M. Yalisove

Table of Contents

[More information](#)

Formation of Foamy Coatings by Laser Ablation of Glass-ceramic Substrates in the Nanosecond Regime Substrate - Temperature and Wavelength Dependence	63
Daniel Sola, Andrés Escartín, and Jose I. Peña	
Laser Direct Writing of Graphene Patterns.....	69
J.B. Park, W. Xiong, Z.Q. Xie, M. Mitchell, Y. Gao, M. Qian, and Y.F. Lu	
Closed-loop Control of a Laser Assisted Carbon Nanotube Growth Process for Interconnects in Flexible Electronics	75
Yoeri van de Burgt, Yves Bellouard, Rajesh Mandamparambil, and Andreas Dietzel	
Laser Welding of Transparent High Performance Polymer Foils by Using Silver Nanoparticles as Absorption Layer.....	81
Matthias Neuber and Andreas Heilmann	

***LASER-MATERIAL INTERACTIONS
AT MICRO/NANOSCALES***

* Laser-assisted Surface Engineering of Thin Film Electrode Materials for Lithium-ion Batteries.....	89
Wilhelm Pfleging, Robert Kohler, Steffen Scholz, Carlos Zieber, and Johannes Proell	
* What Can Lasers Do in the Nano-fabrication of Carbon Nanotube Based Devices?	101
Yun Shen Zhou, Wei Xiong, Masoud Mahjouri-Samani, Yang Gao, Matt Mitchell, and Yong Feng Lu	
Micro-structuring of Metal Films by Localized Single-pulse Laser Irradiation	113
Chandra Prakash R. Gaddam, Joseph P. Moening, Nanke Jiang, and Daniel G. Georgiev	
Assembly of Carbon Nanotube Devices by Tip-induced Optical Trapping	119
W. Xiong, Y.S. Zhou, M. Mitchell, J.B. Park, M.M. Samani, Y. Gao, and Y.F. Lu	

*Invited Paper

Cambridge University Press

978-1-605-11342-5 - Materials Research Society Symposium Proceedings Volume 1365:

Laser-Material Interactions at Micro/Nanoscales

Edited by Yongfeng Lu, Craig B. Arnold, Costas P. Grigoropoulos, Michael Stuke and Steven M. Yalisove

Table of Contents

[More information](#)

High Photosensitivity Two-photon Photoresists for Large Area Surface Microstructuring	125
Robert J. DeVoe, Tzu-Chen Lee, Jeremy K. Larsen, David A. Ender, Jennifer J. Sahlin, Craig R. Sykora, Cheryl A. Patnaude, Matthew R. Atkinson, Michael E. Griffin, Brian J. Gates, and David H. Redinger	
Optimization of Cavity Length to Obtain Low Threshold Solid-state Dye Laser.	131
Lan-Ting Shi, Feng Jin, Mei-Ling Zheng, Xian-Zi Dong, Wei-Qiang Chen, Zhen-Sheng Zhao, and Xuan-Ming Duan	
Author Index	137
Subject Index	139