PROCEEDINGS OF SPIE

Optics Damage and Materials Processing by EUV/X-ray Radiation VII

Libor Juha **Saša Bajt** Stéphane Guizard *Editors*

1–3 April 2019 Prague, Czech Republic

Sponsored and Published by SPIE

Volume 11035

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:

Author(s), 'Title of Paper," in Optics Damage and Materials Processing by EUV/X-ray Radiation VII, edited by Libor Juha, Saša Bajt, Stéphane Guizard, Proceedings of SPIE Vol. 11035 (SPIE, Bellingham, WA, 2019) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510627369

ISBN: 9781510627376 (electronic)

Published by

SPIF

P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445
SPIE.ora

Copyright © 2019, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/19/\$18.00.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

Publication of record for individual papers is online in the SPIE Digital Library.



Paper Numbering: Proceedings of SPIE follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

Contents

V Vii	Authors Conference Committee
	FACILITIES AND THEIR OPTICS
11035 05	Table-top focused EUV optical system with high energy density and its application on EUV damage tests [11035-4]
	ULTRASHORT PULSES IN ACTION
11035 07	Ultrafast dynamics of water exposed to XFEL pulses (Invited Paper) [11035-6]
	SHORT PULSES IN ACTION
11035 0G	Target return current in low-intensity laser target interaction [11035-15]
	DAMAGE AND STRUCTURING
11035 OI	Tuning the functional properties of YBa ₂ Cu ₃ O ₇₋₈ by synchrotron x-ray irradiation [11035-17]
11035 OJ	Actinic damage of Y/Mo multilayer Bragg-optics in a tabletop extreme ultraviolet laser (Invited Paper) [11035-18]
11035 OK	Nanostructuring of PMMA, GaAs, SiC and Si samples by focused XUV laser beam [11035-19]
	Instrumentation and methods
11035 OM	Near-edge x-ray absorption fine structure spectroscopy with laser plasma sources of soft x-ray radiation [11035-21]
11035 ON	Photoluminescence properties and characterization of LiF-based imaging detector irradiated by 10 keV XFEL beam [11035-22]

11035 00	Aging of Al thin film extreme ultraviolet filters [11035-23]
	THEORY AND SIMULATIONS
11035 0Q	Modeling warm dense matter formation within tight binding approximation (Invited Paper) [11035-25]
11035 OR	Modelling extreme ultraviolet ablation interactions (Invited Paper) [11035-26]