

ADVANCED OPTICAL TECHNOLOGIES

EDITOR-IN-CHIEF

Michael Pfeffer, Weingarten, Germany
University of Applied Sciences Ravensburg-Weingarten, Germany

EDITORIAL BOARD

Stefan Bäumer, Philips Lighting, Netherlands
Donis Flagello, Nikon RCA, USA
Jin Guofan, Tsinghua University, China
Norbert Kaiser, Fraunhofer IOF, Germany
Malgorzata Kujawinska, Warsaw University of Technology, Poland
Peter Loosen, Fraunhofer ILT, Germany
Yi Luo, Tsinghua University, China
Angus Macleod, Thin Film Center Inc., USA
Douglas McCarter, McCarter Machine Inc., USA
Peter Seitz, University of Neuchâtel, Switzerland
Stefan Sinzinger, Technical University Ilmenau, Germany
Michael Totzeck, Carl Zeiss AG, Germany
Hugo Thienpont, Vrije Universiteit Brussel, Belgium
Wilhelm Ulrich, Carl Zeiss AG, Germany
Hexin Wang, Carl Zeiss Shanghai Co., China

MANAGING EDITOR

Holger Kleessen, Berlin, Germany

FOUNDING PUBLISHER

Andreas Thoss, Berlin, Germany

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions or liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

ISSN 2192-8576 · e-ISSN 2192- 8584

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/aot.

EDITOR-IN-CHIEF Michael Pfeffer, Weingarten, Germany, University of Applied Sciences Ravensburg-Weingarten, Germany, Hochschule Ravensburg-Weingarten, Doggenriedstrasse, Postfach 1261, 88241 Weingarten, Germany, Tel.: +49 (0)751 501 9539, Fax: +49 (0)751 501 9874, Email: michael.pfeffer@hs-weingarten.de

MANAGING EDITOR Holger Kleessen, Berlin, Germany, Email: contact@advanced-optics.org

FOUNDING PUBLISHER Andreas Thoss, Berlin, Germany, Email: th@thoss-media.com

RESPONSIBLE FOR ADVERTISEMENTS Panagiota Herbrand, De Gruyter, Mies-van-der-Rohe-Straße 1, 80807 München, Germany. Tel.: +49 (0)89 769 02 – 394, Fax: +49 (0)89 769 02 – 350
Email: panagiota.herbrand@degruyter.com

© 2012 Walter de Gruyter GmbH & Co. KG, Berlin/Boston

TYPESETTING Compuscript Ltd., Shannon, Ireland

PRINTING Franz X. Stücker Druck und Verlag e.K., Ettenheim

Printed in Germany



CONTENTS

ADVANCED OPTICAL TECHNOLOGIES
2012 · VOLUME 1 · NUMBER 3

EDITORIAL

- Micro-optics and diffractive optics: Introduction to the topical issue**
H.P. Herzig and M.A. Golub 101

VIEWS

- Leverage photonics with efficient partnerships between science and industry** 103

COMMUNITY

- News from The European Optical Society** 109
Conference Notes 111
Calendar 115

TOPICAL ISSUE ON MICRO-OPTICS AND DIFFRACTIVE OPTICS

TUTORIAL

- Micro-optics: a micro-tutorial**
H. Zappe 117

REVIEW ARTICLES

- Bandlimited illumination with engineered diffusers**
T.R.M. Sales 127

REVIEW ARTICLES

- Wafer-scale micro-optics fabrication**
R. Voelkel 135

- Fresnel incoherent correlation holography (FINCH): a review of research**
J. Rosen and G. Brooker 151

RESEARCH ARTICLES

- Nanostructured micro-optics based on a modified stack-and-draw fabrication technique**
M.R. Taghizadeh, A.J. Waddie, R. Buczynski, J. Nowosielski, A. Filipkowski and D. Pysz 171

- Wide-band resonance reflectors for the visible spectrum**
T. Saastamoinen, M. Korhonen and M. Kuittinen 181

- Hybrid hyperchromats for chromatic confocal sensor systems**
M. Hillenbrand, B. Mitschunas, C. Wenzel, A. Grewe, X. Ma, P. Feßer, M. Bichra and S. Sinzinger 187

- Numerical gradient-index design for coherent mode conversion**
D. Lin and J.R. Leger 195

TUTORIAL

- Practical aspects of modern interferometry for optical manufacturing quality control: Part 2**
R. Smythe 203

ERRATUM

- Injection molded high precision freeform optics for high volume applications**
L. Dick, S. Risse and A. Tünnermann 213