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Front Matter: Volume 9580

, "Front Matter: Volume 9580," Proc. SPIE 9580, Zoom Lenses V, 958001 (14 September 2015); doi: 10.1117/12.2208533

Event: SPIE Optical Engineering + Applications, 2015, San Diego, California, United States

PROCEEDINGS OF SPIE

Zoom Lenses V

Ellis Betensky
Takanori Yamanashi
Editors

10–13 August 2015
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 9580

Proceedings of SPIE 0277-786X, V. 9580

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Zoom Lenses V, edited by Ellis Betensky, Takanori Yamanashi, Proc. of SPIE Vol. 9580
958001 · © 2015 SPIE · CCC code: 0277-786X/15/\$18 · doi: 10.1117/12.2208533

Proc. of SPIE Vol. 9580 958001-1

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Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Zoom Lenses V*, edited by Ellis Betensky, Takanori Yamanashi, Proceedings of SPIE Vol. 9580 (SPIE, Bellingham, WA, 2015) Article CID Number.

ISSN: 0277-786X

ISBN: 9781628417463

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) • Fax +1 360 647 1445

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The CID Number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages.

Contents

v	<i>Authors</i>
vii	<i>Conference Committee</i>
ix	<i>Introduction</i>

SESSION 1	SPECIAL SESSION
9580 02	Challenges of designing a zoom lens for planetarium projection (Invited Paper) [9580-1]
9580 03	"Perfect Zoom System" which enables both a zoom ratio of 25:1 and a high-resolution in stereomicroscope (Invited Paper) [9580-2]
9580 04	Understanding how entrance and exit pupils have determined the evolution of the modern zoom lens design (tutorial) (Invited Paper) [9580-3]
SESSION 2	THEORY AND ANALYSIS
9580 05	Toward a paraxial pre-design of zoom lenses (Invited Paper) [9580-4]
9580 06	New tools for finding first order zoom lens solutions and the analysis of zoom lenses during the design process [9580-5]
9580 07	Modular optical design for flexible beam expansion [9580-6]
9580 08	Zoom lens design for tilted objects [9580-7]
9580 09	Compensator selection considerations for a zoom lens [9580-8]
9580 0A	To zoom or not to zoom: do we have enough pixels? [9580-9]
SESSION 3	APPLICATIONS I: INFRARED
9580 0B	Increasing dual band infrared zoom ranges [9580-10]
9580 0C	Optical design study and prototyping of a dual-field zoom lens imaging in the 1-5 micron infrared waveband [9580-11]
9580 0D	Optical design study of a VIS-SWIR 3X zoom lens [9580-12]
9580 0E	Chromatic correction for a VIS-SWIR zoom lens using optical glasses [9580-13]

SESSION 4 APPLICATIONS II: CAMERA LENS

- 9580 0F **Cine-servo lens technology for 4K broadcast and cinematography (Invited Paper)**
[9580-14]
- 9580 0G **Extreme retrofocus zoom lens for single-shot, single-lens HDR photography and video**
[9580-15]
- 9580 0H **All-reflective optical power zoom objectives (Invited Paper)** [9580-16]
- 9580 0I **Design of a wide angle zoom lens using an asphere to achieve superior solutions** [9580-17]

SESSION 5 APPLICATIONS III: CAMERA LENS

- 9580 0J **Change of optical design thought about focusing of zoom lens (Invited Paper)** [9580-18]
- 9580 0K **Multi-channel compact optical zoom module by using microlenses** [9580-19]
- 9580 0L **Design study for a 16x zoom lens system for visible surveillance camera** [9580-20]
- 9580 0M **Novel optical system for very thin zoom lenses** [9580-21]
- 9580 0N **A study of high ratio zoom optics with intermediate image** [9580-22]

POSTER SESSION

- 9580 0O **Liquid lens driven by elastomer actuator** [9580-23]

Authors

Numbers in the index correspond to the last two digits of the six-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first four digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Bentley, Julie L., 06, 0D, 0E, 0G, 0L	Su, Guo-Dung J., 0K
Berman, Rebecca, 0D	Trumper, Isaac, 0L
Betensky, Ellis, 04	Usui, Fumiaki, 0F
Brown, Nicolas S., 0L	Vella, Anthony, 0G, 0L
Carmeli, Ran, 0C	Visconti, Anthony J., 0D, 0E
Chen, Changchen, 0L	Vizgaitis, Jay, 0B
Corsetti, James A., 0D	Wakazono, Tsuyoshi, 0F
Doering, D., 02	Wickenhagen, S., 07
Fang, Kejia, 0D	Williams, Daniel J. L., 06, 0D, 0E
Fang, Yi-Chin, 0N	Xu, Di, 0L
Fenning, Eryn, 0D	Yabe, Akira, 0M
Freyer, Daniel K., 08	Yamanashi, Takanori, 0I
Fuchs, U., 07	Yee, Anthony J., 06, 0D
Gandara-Montano, Gustavo A., 06, 0L	Yen, Chih-Ta, 0N
Grüger, Heinrich, 0H	Youngworth, Richard N., 0A
Guevara-Torres, Andres, 0L	Zhao, Yang, 0D, 0E, 0L
Hagimori, Hitoshi, 0J	Zhou, Zuowei, 0O
Hanft, M., 02	Zimmermann, T., 05
Herman, Eric, 0A	
Jin, Boya, 0O	
Jung, Hae Won, 0L	
Kaufman, Morris I., 08	
Lee, Gi-Bbeum, 0O	
Lee, Ji-Hyeon, 0O	
Leffler, Heather R., 08	
Li, Heng, 0L	
Liao, Wei-Hsiang, 0K	
Malone, Robert M., 08	
McCarthy, Peter, 06, 0D, 0E	
McGillivray, Kevin D., 08	
Meidinger, Alfred, 08	
Milde, T., 02, 05	
Miyake, Norio, 03	
Mizuta, Masahiro, 03	
Moore, Duncan T., 06, 0D, 0E	
Nah, Changwoon, 0O	
Nakayama, Hiroaki, 03	
Nikolov, Daniel K., 0L	
Nurishi, Ryuji, 0F	
Ohuchi, Yumiko, 03	
Olson, Craig, 0D	
Phillips, David H., 08	
Reimers, Jacob, 0L	
Ren, Hongwen, 0O	
Reshidko, Dmitry, 0C	
Reshidko, Pavel, 0C	
Rogers, John R., 09	
Schmidt, Greg R., 0D	
Shinada, Nobuhiro, 03	

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2 Theory and Analysis

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Ellis Betensky, Consultant (United States)

3 Applications I: Infrared

Akira Yabe, Consultant (Japan)

4 Applications II: Camera Lens

Ellis Betensky, Consultant (United States)

5 Applications III: Camera Lens

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Introduction

This volume contains the proceedings of Zoom Lenses V, the fifth SPIE conference on zoom lenses.

It was only about 50 years ago that optimization techniques were first applied to zoom lens design. During this time, computer software for the design of conventional lenses has progressed to the level that even the starting point can be determined. Papers presented at the Zoom Lenses V conference demonstrate that zoom lens design software is now effective in selecting promising starting points. The authors suggest further developments can be expected.

Applications for zoom lenses are now considerably broader than those of the past. These papers describe new designs for reflective and decentered systems, imaging in multiple spectral bands, and collimation. The papers also discuss special problems associated with manufacturing tolerances.

Although the computer software has advanced, the value of classical aberration theory has not been abandoned. Several authors show the usefulness of classical aberration theory coupled with thin lens design techniques not only for providing insight and understanding, but to be used in the design optimization itself. Authors also demonstrate the importance of determining the optimum aperture stop location in the initial design stages.

The papers are organized into five different sessions: Special; Theory and Analysis; Applications I - Infrared; Applications II - Camera Lens; and Applications III – Camera Lens.

Ellis Betensky
Takanori Yamanashi