

# Contents

- vii *Preface*
- 3 **History of infrared optics**  
R. B. Johnson, C. Feng, Univ. of Alabama in Huntsville
- 19 **Lens design for the infrared**  
R. E. Fischer, OPTICS 1, Inc.
- 44 **Pacing elements of IR system design**  
G. J. Zissis, Environmental Research Institute of Michigan
- 55 **Optical materials for the infrared**  
W. L. Wolfe, Optical Sciences Ctr./Univ. of Arizona
- 69 **Athermalization of IR optical systems**  
P. J. Rogers, Pilkington Optronics (UK)
- 95 **Narcissus in current generation FLIR systems**  
E. H. Ford, D. M. Hasenauer, Optical Research Associates
- 120 **MultimodeIRST/FLIR design issues**  
G. R. Armstrong, P. J. Oakley, B. M. Ranat, Pilkington Optronics (UK)
- 142 **Key technologies for IR zoom lenses: aspherics and athermalization**  
P. Nory, Etablissement Pierre Angenieux (France)
- 153 **Analysis and performance limits of diamond-turned diffractive lenses for the 3-5 and 8-12 micrometer regions**  
M. J. Riedl, J. T. McCann, OFC Corp.
- 164 **Design and specification of diamond-turned optics**  
R. A. Clark, OFC Corp.
- 184 **Robotic-based fabrication system for aspheric reflectors**  
J. Zimmerman, R. A. Jones, W. J. Rupp, Itek Optical Systems
- 193 **Refractive-index interpolation fit criterion for materials used in optical design**  
R. J. Korniski, Optical Research Associates
- 218 **Diamond windows for the infrared: fact and fallacy**  
C. A. Klein, Raytheon Co.
- 258 **Metal mirror review**  
D. J. Janeczko, Martin Marietta Electronics & Missiles Group
- 281 *Author Index*

## Preface

As reflected by the diversity of the papers, this Critical Review conference covered many aspects of design and fabrication in the infrared. We know that navigation and targeting with sophisticated, complex infrared imaging EO-systems have become invaluable to modern warfare: high tech does work! The optics are the eyes' extension into the world of the otherwise invisible thermal spectrum. Commercial applications abound in the fields of medicine, industry, and law enforcement.

IR technology is about sixty years old and has matured into quality that rivals the best black-and-white television imagery. Detector performance and signal processing are taxing the optical performance, and design and fabrication in optics are trying to stay ahead of electronics.

IR optical design for scanning systems requires some uniqueness not found in visual systems, such as narcissus control, pupil reimaging (cold shielding), and thermal references for detector normalization.

Shortcomings in refractive IR optical materials and multispectral, lightweight systems requirements have spawned reflective designs. Precision machining (diamond-turning) and new, composite materials make their implementation possible. Aspheric surfaces have become economical and are freely used. Diffractive optics technology is emerging, and synthetic diamond may be an alternate (window) material to the few available now.

We are looking forward to even more exciting progress in the world of IR optics.

Many thanks to all the contributors and participants of this Critical Review conference for their efforts and interest.

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