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Polymer Optics and Molded Glass Optics: Design, Fabrication, and Materials II

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Introduction

Polymer optics continues to grow, both as an academic subject and in its importance as a technology. Commensurately, our Polymer Optics symposium has grown from 8 papers in 2008, to 12 papers in 2010, to 22 papers in 2012.

As major reason for the growth this year was the extension of the symposium to include papers on the molding of glass. This inclusion of both polymeric and glass optical technology—materials, design and manufacture—welded two intimately related materials technologies, sometimes complementary; sometimes competitively.

In the last decades, optical polymers have supplanted glass where it is advantageous, i.e., where polymers can provide low weight or enable design complexity by the integrated injection molding of optics, mounting, alignment and structural features. And glass technology has itself advanced, in response to this challenge, by adopting some of the forming and molding technologies that were previously used only for plastics.

As optical materials, polymers and glass are ubiquitous. Though glass has been used for more than 3 millenia longer than plastics, today, it is difficult to conceive of a mobile phone or tablet or laptop computer sold without a camera using polymeric optics. The manufacturing volume is in the hundreds of millions of units per year.

Our symposium was very well attended in San Diego. Thirteen papers came from industry; nine came from academia. Twelve papers came from American authors; Ten from overseas: Europe, Asia and South America. The papers ranged from the newest technologies in optical materials to mature manufacturing technologies for commodities. Unfortunately, only two thirds of the presenters submitted manuscripts for these Proceedings; but the papers printed herein still provide an abundance of excellent research and application.

Additionally, we had a lively and provocative panel discussion, comparing the relative merits of glass and polymers as optical materials. This session answered all questions from all comers, concerning issues from design trade-offs to manufacturing costs. I thank Mike Schaub, Will Beich, and Alan Symmons for their willingness to share their tremendous expertise in optical material technology.

I thank SPIE for sponsoring the symposium. I would also like to thank my co-chairs and committee members for their excellent contributions: Mike Schaub of Raytheon, Will Beich of GSPlastic Optics, Stefan Bäumer of TNO (the Netherlands), and Alan Symmons of LightPath. With their assistance, we look forward to

ensuring that the next International Symposium on Polymer Optics and Molded Glass Optics is the best yet.

We look forward to seeing you in San Diego, in August 2013.

David Krevor
Tactus Technology

Polymer Optics and Molded Glass Optics Authors

Top row: Lou Mertus (LightPath), Xi Wang (University of Buffalo), Yi-Cheng Li (Nat'l Cheng Kung U. Taiwan); **middle row**: Matt Jaworski (AutoDesk), Nelson Claytor (Fresnel Technologies), Giuseppe Cirino (Sao Paulo U. Brazil); **bottom row**: R. Hamilton Shepard III (MIT Lincoln Lab), Billy Tran (Meadowlark Optics), Ben Phipps (Wamco)

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Top row: Kara Shell (Replex), Ansgar Hellwig (Auer Lighting, Germany), Masafumi Seigo (Nalux, Japan); **2nd row**: Guido Pongs (Aixtooling, Germany), **below**: "Plastics vs. Glass" Panel Discussion (Symmons, Beich, Schaub, Krevor).