

Colloquium Sponsored by the School of Materials Science & Engineering

Optical Design and the Required Glass Types

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Abstract

Starting at the optimum geometry and glass selection for a Zeiss Tessar Lens, the role of different glass types for optical design is discussed. Key concepts for the assessment of lenses are introduced (modulation transfer function, transverse ray aberration curves). The distribution of optical glasses in the Abbe diagram is explained both with respect to optical needs and physical limitations (Kramers-Kronig-relations).

Biography

Expertise Novel Optical Technologies

- **Glass Transition (Structural Relaxation and Viscoelasticity)**
- **Heat Transfer and Thermal Processing**

Professional Experience

Since 2001 **Executive Scientist New Materials**

Strategy and RoadMapping on Novel Materials and Optoelectronics; Networking (Technical Committees of the International Congress on Glass, Industrial Tutor of Funded Projects); Internal Consultant on Optics, Thermodynamics, and Physical Chemistry

Before 2001 **Scientist and Group Manager (Material Development and Mathematical Simulation)**

Education

1990 **Doctorate in Physics, Johannes-Gutenberg-Universität, Mainz, Germany 1987**
Diploma in Physics, Johannes-Gutenberg-Universität, Mainz, Germany

Member of industrial tutorial committees of two funded projects on computational material sciences; Head of industrial tutorial committees of two funded projects on spectroscopy at glass melts; Member of Technical Committees 3 (Basic Glass Science) and 20 (Glasses for Optoelectronics) of the International Commission on Glass; Vice-Chairman of "Fachausschuß I Physik und Chemie des Glases" (Technical Committee I: Physics and Chemistry of Glasses) of the "Deutsche Glastechnische Gesellschaft" (German Society on Glass Technology)

Wednesday, November 16, 2005
5:00 PM – AMRL Conference Room