EDITORIAL

NEWS & INFOS

INTERVIEW

Effectively delivering the next generation of UV laser solutions
Interview with Tobias Damm, Managing Director of Coherent Lambda Physik GmbH

MARKET RESEARCH

Laser materials processing systems in 2005
Arnold Mayer
The world market reaches record volume.

China’s laser market climbs the curve
Winn Hardin
The acceptance of free market economic policies of the past two decades has catapulted Chinese laser businesses, markets, and technology on the world stage.

PRODUCTS

Product informations

LASER APPLICATIONS

Excimer lasers meet the demands of photomask qualification
Performance requirements for a 193 nm excimer laser for aerial imaging. Recent advances in laser performance, reliability, lifetime and cost of ownership are reviewed.
**LASER MEASUREMENT**

- **33 3D sensor zoo**
  *Markus C. Knauer, Claus Richter and Gerd Häusler*

  Optical 3D Sensors provide a fast non-destructive possibility to obtain the three-dimensional shape of a huge variety of objects – an overview of some important sensor principles and their limits.

- **38 From lab to factory**
  *Roland Höfling*

  Optical measuring techniques offer essential benefits that make them very good candidates for industrial use. But the optical technology has to grow out of the lab, conquering the factory floor.

- **42 Shape measurement using pulsed optical holography**
  *Susanne Frey, Andrea Thelen, Sven Hirsch and Peter Hering*

  The starting point for the development of a new shape measurement system was the request of surgeons working in the field of cranio-facial and reconstructive surgery for an improved system for precise facial measurement.

**LASER SOURCES**

- **46 A new tool for lung imaging**
  *Thomas Laurent and Herwig Stange*

  In many cases laser diodes enable laser systems to find their way out of a research lab to become commercial applications. One example could be the $^3$He magnetic resonance imaging which complements very well the conventional Magnetic Resonance Imaging (MRI).

**BASICS**

- **50 Next generation optical engineering**
  *Frank Wyrowski and Hagen Schimmel*

  The more photonics is used to enable technical innovation the more challenging optics simulation becomes. Nowadays optical engineering is much more than lens design. Instead it deals with the modeling and design of any kind of optical system and light source. That requires a generalization of the concepts and modeling approaches of optical engineering.

**COMPANY PROFILES**


**BOOKS**

- **60**

**MEETINGS/CALENDAR**

- **61**

**PREVIEW**

- **64**

**TRADE DIRECTORY**

- **65**

**MASTHEAD**

Cover: Doing white-light interferometry on optically rough surfaces is complicated: The cover shows a color-coded height measurement of a mold. The measurement was performed with the coherence radar.