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Dieter Schuöcker
Richard Majer
Julia Brunnbauer
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Introduction

During the last 50 years since the invention of the laser by Dr. Theodore Maiman, the field of coherent light technology has experienced fantastic development. Nowadays coherent light sources are available for a wide range of wavelengths: from the ultraviolet to the infrared, with powers from microwatt to megawatt and with pulse lengths from ultra short to very large; the active and light-emitting media range from vacuum; a large number of gases via various kinds of crystals to semiconductors. Many different excitation principles are used with electrical energy, chemical energy, optical energy, as well as others. High beam power is offered by carbon dioxide lasers, neodymium YAG lasers, and most recently by diode lasers where a large number of single elements cooperate. It should also be mentioned that many of these lasers deliver excellent beam quality with high focus ability and therefore offer very important applications: material processing for industrial use, the cutting and welding of metals and plastics, measurement techniques, surgery, and last but not least, energy transmission and defense.

All topics mentioned above were addressed in a large number of keynote and invited papers as well as other oral and poster contributions at the conference. I am personally interested in industrial applications and in this field the conference showed important highlights such as: the development of diode lasers with high power and excellent beam quality close to conventional high power lasers, the development of ultra precise carbon dioxide lasers for printing applications, and new welding techniques combining plasmas and laser beams. That some of these developments have been achieved in Austria pleases me very much.

Finally, I would like to express my thanks to all authors (keynote, invited, and regular presenters) as well as all of our sponsors. First of all the government of Upper Austria, the Federal Ministry for Traffic, Innovation and Technology (Austria), and companies such as Fronius GmbH (Austria), Trotec Laser GmbH (Austria), and Trumpf Maschinen Austria GmbH + Co. KG (Austria). I also appreciate the efficient help of my coworkers Richard Majer, O. Spitzer, M. Nessmann and Julia Brunnbauer. Without the help from all of the above, the conference could not take place.

Dieter Schuöcker