

Preface

On Sep. 30, 2017, Prof. Karl Joachim Ebeling retired from his position as the Director of the Institute of Optoelectronics which he held from its establishment in 1989 until 2001 and again over the last two years after his time as President of Ulm University. We thank him for his encouraging leadership and many years of fruitful and enjoyable cooperation. Currently, Prof. Hans-Jörg Fecht, Director of the Institute of Micro and Nanomaterials, is appointed as the Acting Director of Optoelectronics. According to the plans of the Faculty of Engineering, Computer Science and Psychology of Ulm University, our Institute will become part of an Institute of Functional Nanosystems (FNS) to be established in 2018. Ferdinand Scholz, Peter Unger, and Rainer Michalzik will continue their research activities under the umbrella of FNS. As a consequence, this 28th Annual Report of the Institute of Optoelectronics will most probably be the last issue, as indicated on the back side of the cover. A sum total of more than 1000 technical papers has been published so far.

On the technical side, the VCSELs and Optical Interconnects Group has continued the research on four topics, namely VCSELs with monolithically integrated phototransistors for optically controlled current confinement, spintronic VCSELs with high and tunable birefringence for future polarization modulation schemes, a new time-of-flight-based method for depth imaging using VCSEL illumination, as well as refractive index sensing with VCSEL-related resonant devices, the latter two with the involvement of K.J. Ebeling. As an outlook, the VCSEL Group will organize the *11th European VCSEL Day Workshop* on April 12 and 13, 2018 in the premises of the University West campus.

In 2017, the GaN group could acquire funding of a project which focuses on vertical field effect transistors in cooperation with the Fraunhofer Institute of Applied Solid State Physics (Freiburg) and the University of Freiburg. This activity strengthens our research concerning low defect density GaN grown by hydride vapor phase epitaxy. Our sensor activities have further intensified the cooperation with our colleagues from Organic Chemistry (Prof. T. Weil), a quite exciting and new field for us. Also the studies about AlBGaN have brought many interesting results, substantially supported by a guest scientist from the Czech Academy of Sciences (Prague), Dr. Markéta Zíková.

In the High-Power Semiconductor Laser Group, a multipass pump optics for quantum-well-pumped semiconductor disk lasers has been developed allowing up to three double passes of the pump light through the laser disk. Absorption rates of more than 75% have been achieved with this setup yielding 16 W of continuous output power and slope efficiencies above 50%.

Hildegard Mack, a secretary of the Institute for many years, has accepted a new position in the administration of Ulm University. We thank her for the great service and wish her all the best. We are grateful to Sükran Kilic for taking over most of her responsibilities.

Finally we thank all readers for the interest in the Annual Report series of our Institute.

Rainer Michalzik
Ferdinand Scholz
Peter Unger

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