

Preface



This issue of *physica status solidi* contains a collection of contributions of Symposium F of the 2007 Spring Meeting of the European Materials Society (E-MRS) entitled “Novel Gain Materials and Devices Based on III–N–V Compounds”, held in Strasbourg (France) on 30 May–1 June 2007. This two-day symposium had a busy schedule containing 6 invited, 39 oral and 28 poster presentations. Also, three students, Paul Jefferson, Miguel Montes Bajo, and Giorgio Pettinari were awarded the Graduate Student Award by the Organizing Committee and one student James Chamings, was awarded the Best Poster Prize.

The research presented in the symposium reflected the current state-of-the-art in the novel semiconductor III–N–V compounds including GaInNAs, GaNP, GaInPAs, GaN, GaInN and with special emphasis given to InN, comprising both material and device aspects. The symposium started with a session on short wavelength nitrides through an excellent invited talk on the recent modelling and test results, showing successful optimization of optical InGaN-based devices emitting in the wavelength range 420–650 nm. Several talks focused on the MBE and MOVPE growth of these materials and two talks on transport devices: one on high power and one on bistability. The following session was on the novel GaNAs, GaAsNP, and GaInNP materials systems just being started to be explored where basic material properties and quantum well (single and multiple) structures were reported on. An exhaustive invited talk on the effective mass in GaAsN was also presented. This was followed by a session on the InN material system which has attracted substantial inter-

est as its bandgap has been found to be 0.7 eV. An introductory talk gave an extremely clear overview of this very interesting system. Material issues of doping and interfaces were reported in this very growth orientated session. The following two sessions were chiefly devoted to the well-studied and comparably mature system GaInNAs, although some new variants were also presented. Results of growth of GaInNAs on both GaAs and InP as well as very basic and application-focused work was presented. This part of the symposium also contained an excellent overview of recent studies of InGaAsN/InP lasers and the novel GaInNP/GaAs system. The next session focused on devices based on dilute nitride materials which started with an excellent overview on optoelectronic devices based on GaInNAs, particularly VCSEL and VECSEL-based applications. The potential for disc lasers, amplifiers, VECSELs and VCSELs was further explored in this session. The final session was on electronic devices where oxide interface studies as well as electrical and optical studies were featured. This highlight may illustrate the broad scope of the symposium which, as we hope, will contribute to the further proliferation of this field.

Finally, we would like to thank the invited speakers for their high level presentations, the authors, and all participants for their valuable contributions, as well as the referees for their efforts and the Wiley-VCH staff. We express to all our deep gratitude.

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Founded in 1983, the European Materials Research Society (E-MRS) now has more than 3000 members from industry, government, academia and research laboratories, who meet regularly to debate recent technological developments of functional materials. The E-MRS differs from many single-discipline professional societies by encouraging scientists, engineers and research managers to exchange information on an interdisciplinary platform, and by recognizing professional and technical excellence by promoting awards for achievement from student to senior scientist level.

As an adhering body of the International Union of Materials Research Societies (IUMRS), the E-MRS enjoys and benefits from very close relationships with other Materials Research organizations elsewhere in Europe and around the world.

Each year, E-MRS organizes, co-organizes, sponsors or co-sponsors numerous scientific events and meetings. The major society conference, the E-MRS Spring Meeting, is organized every year in May or June and offers on average 20 topical symposia. It is widely recognized as being of the highest international significance and is the greatest of its kind in Europe with about 2000 attendees every year. Each symposium publishes its own proceedings that document the latest experimental and theoretical understanding of material growth and properties, the exploitation of new advanced processes, and the development of electronic devices that can benefit best from the outstanding physical properties of functional materials.