

Proceedings of the 15th International Winterschool on New Developments in Solid State Physics (Mauterndorf (Bad Hofgastein), 18–22 February 2008)

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FOREWORD

Proceedings of the 15th International Winterschool on New Developments in Solid State Physics (Mauterndorf (Bad Hofgastein), 18–22 February 2008)

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Günther Bauer.

This special issue of *Journal of Physics: Condensed Matter* is devoted to Günther Bauer, who celebrated his 65th birthday in September 2007. Günther has had a long career in condensed matter physics, but is known particularly for his studies of high magnetic field transport and optics in semiconductors and, more recently, for the discovery and x-ray analysis of self-organized 3D quantum dot crystals. However, his work is much broader than this, as indicated by the wide selection of topics which are represented in this special issue. Günther began his scientific career in Vienna, became associate Professor at the University of Ulm after habilitation at the Rheinisch-Westfälische Technische Hochschule Aachen, Germany, and then ascended to a full professorship at the Montanuniversität, Leoben, Austria, in 1980. He subsequently moved to the Johannes Kepler Universität, Linz, Austria, in 1990.

Apart from his outstanding scientific achievements, Günther is also known for organizing the biannual winterschool on 'New Developments in Solid State Physics' beginning in 1980. Initially, he worked at this task together with Helmut Heinrich (until 2000) and Friedl Kuchar (1984 until now) and subsequently with Wolfgang Jantsch (who followed Helmut Heinrich in 2002). This winterschool was, and remains, very important in identifying new trends in solid state physics, and thus has a number of important proponents in the scientific community. It

was at one of the first of these winterschools where the initial reports of the quantum Hall effect were presented, and it has been a meeting place where established experts (including three Nobel laureates) teach, and interact with students and young researchers.

It is important to know that Günther's excellent international connections were necessary to maintain the high level of the winterschool over almost 30 years. After the first meeting in 1980 in Mariapfarr, these winterschools were held thirteen times in the castle of Mauterndorf, Province of Salzburg, Austria, and therefore the village name Mauterndorf became synonymous for this series within the semiconductor and nanoscience community. In 2008, the school had outgrown the available facilities in Mauterndorf, and relocated to Bad Hofgastein, not very far from Mauterndorf but providing a substantially larger venue, which allowed both facilities and accommodation for the ever growing number of attendees.

In the last few winterschools, the main topic has been 'Semiconductor Nanostructures—Physics and Applications'. In 2008, we had about 240 participants from around the world and an outstanding scientific program comprising the most exciting developments of the past two years. Indeed, most papers in this special issue of *Journal of Physics: Condensed Matter* were presented at the 2008 Mauterndorf meeting. In addition, a number of outstanding experts on nanoscience and long term friends of the Mauterndorf winterschool volunteered to contribute to honour Günther. We thank all of them for their efforts.