

Proceedings of the XXIX International School
on Physics of Semiconducting Compounds
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Preface

Continuing the tradition of thirty years, the XXIX International School on Physics of Semiconducting Compounds "Jaszowiec 2000" was organized in Jaszowiec by the Institute of Physics of the Polish Academy of Sciences, Faculty of Physics of Warsaw University, and High Pressure Research Center of the Polish Academy of Sciences. A two-day Tutorial Session providing an introduction to the main topics of the School was organized by Dr. B. Kowalski. This year, about 200 colleagues from 17 countries participated in the School. The School consisted of 22 invited lectures, along with 18 oral and 96 poster presentations. The most important issues were GaN-based heterosystems, and properties of both two- and zero-dimensional electron gas. A new and fascinating topic of hybrid magnetic semiconductor structures was presented for the first time. This issue of *Acta Physica Polonica A* collects 12 invited talks.

Both the School and the Tutorial Session were kindly sponsored by:

- Committee for Scientific Research,
- Polish Academy of Sciences (Committee of Physics and Office of International Relations),
- Ministry of National Education,
- Polish Physical Society,
- Foundation *Pro Physica*,
- Leopold Kronenberg Foundation.

I would like to give wholehearted thanks for this generous help, which has allowed the organizers to support 22 young participants from 7 countries, as well as all invited speakers.

Finally, I would like to thank all the colleagues who helped to organize the School. In particular, I express my gratitude to Prof. J. Kossut, Secretary of the School, and E. Łusakowska. It is also my pleasure to acknowledge the help of M. Arciszewska, U. Raczyńska, B. Sułek, N. Gonzalez Szwacki, B. Wiczorek, J. Wołoszyn, K. Zatoryb, and Z. Żytkiewicz.

Piotr Bogusławski
Chairman of the School

List of invited speakers at the Tutorial Session:

1. Jerzy Bernholc (Raleigh, USA) — *Large-Scale Calculations in Condensed Matter Physics: Methods and Examples*
2. Jürgen Christen (Magdeburg, Germany) — *Optical Microcharacterization of Semiconductor Heterostructures*
3. Manfred Helm (Dresden, Germany) — *Intersubband Lasers and Detectors*
4. Marek Potemski (Grenoble, France) — *Two-Dimensional Electron Gas Studied Using Optical Methods*
5. Tomasz Story (Warsaw, Poland) — *Semiconductor Ferromagnetic Structures*
6. Sukekatsu Ushioda (Sendai, Japan) — *Tunneling Microscopy and Optical Spectroscopy of Electrons in Surface Nanostructures*

List of invited talks at the School:

1. Boris Altshuler (Princeton, USA) — *Electron Correlations in 2DEG*
2. Oliver Ambacher (Garching, Germany) — *Polarization Induced Effects in Group-III-Nitride Heterostructures and Devices*
3. Jacqueline Bloch (Bagneux, France) — *Stimulated Scattering of Microcavity Polaritons*
4. Leszek Dobaczewski (Warsaw, Poland) — *Hydrogen and its Complexes in Silicon*
5. Vincenzo Fiorentini (Monserrato, Italy) — *Some Practical and Conceptual Aspects of Polarization in III-V Nitrides*
6. Izabella Grzegory (Warsaw, Poland) — *Application of GaN Pressure Grown Crystals for Epitaxy of GaN-Based Layer Structures*
7. Bryan L. Gallagher (Nottingham, United Kingdom) — *2D Electron Gas in Non-Uniform Magnetic Fields*
8. Mieczysław Jałochowski (Lublin, Poland) — *Self-Assembled Parallel Mesoscopic Pb Wires on Vicinal Si(111)*
9. Grzegorz Karczewski (Warsaw, Poland) — *Many-Body Effects in Spin-Polarized 2D Electron Gas*
10. Susumu Komiyama (Tokyo, Japan) — *Detection of Single Sub-Millimeter-Wave Photons Using Quantum Dots*
11. Laurens W. Molenkamp (Würzburg, Germany) — *Spin Injection in Hybrid Magnetic Semiconductor Structures*
12. David Mowbray (Sheffield, United Kingdom) — *Optical Spectroscopy of Self-Assembled Quantum Dot Structures and Devices*
13. Arkadiusz Orłowski (Warsaw, Poland) — *Quantum Computing*
14. Andrzej Twardowski (Warsaw, Poland) — *Diluted Magnetic III-V Semiconductors*
15. Paul Voisin (Paris, France) — *Breakdown of Rotoinversion Symmetry at Semiconductor Interfaces and In-Plane Optical Anisotropy of Quantum Well Structures*
16. Bernard A. Weinstein (Buffalo, USA) — *High-Pressure Studies of Semiconductors in the Far-Infrared: Donor States in Quasi-2D*