

Proceedings of the XVII National Conference
on Superconductivity

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“Superconductivity and other emergent states
in systems with strongly correlated electrons”

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International Laboratory of High Magnetic Fields and Low Temperatures, Polish Academy of Sciences, Wrocław

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Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, Kraków

Scope:

High temperature superconductivity: phenomena, mechanisms, new materials, applications
Nano-sized and low dimensional superconducting systems
Coexistence of superconductivity and magnetism, proximity effects
Strongly correlated electron systems: heavy fermions, spin fluctuations, charge fluctuations
Quantum phase transitions, quantum critical phenomena
Topological insulators and semimetals

Foreword

The National Conference on Superconductivity (Krajowa Konferencja Nadprzewodnictwa, KKN), which takes place in Poland every two years, became during last decade one of the most important series of meetings of scientists working in the field of superconductivity and magnetism. It is also one of a very few conferences in physics with Polish as a conference language. This year the Conference was devoted to superconductivity and other emergent states in systems with strongly correlated electrons. Besides traditional subjects related to superconductivity it covered also the most intensively explored aspects of magnetism and strongly correlated electron systems, including such hot topics like e.g. topological insulators and optical lattices. For the first time, one subject category was devoted to the applied physics and engineering of superconductors.

The XVII KKN took place in Hotel Artus in Karpacz, which is one of the most beautiful towns in Giant Mountains (Karkonosze), and was co-organized by two institutions from Wrocław: the Institute of Low Temperature and Structure Research and the International Laboratory of High Magnetic Fields and Low Temperatures. The Conference consisted of 15 oral sessions with 22 invited lectures and 39 contributed talks, and 2 poster sessions with 32 presentations of mainly experimental results and 29 presentations of theoretical studies. The number of participants exceeded 145, which was one of the highest number in the series and showed increasing interest of scientists in the meeting. We were glad to welcome among them 13 participants from abroad (France, Mexico, Switzerland, Ukraine, UK and USA).

The success of the XVII KKN would not be possible without help of the Scientific Committee and the Programme Committee, members of which helped the Organizers to select the most interesting talks covering as wide as possible spectrum of the topics being scope of the Conference. We thank also all the members of the Organizing Committee for very efficient work before and during the meeting. Our special thanks go to Małgorzata Samsel-Czekała — a conference secretary, who with help of Krzysztof Filar, Marcin Matusiak and Tomasz Zaleski was successfully keeping an eye on correspondence, conference website, finances and lodging. We thank also our scientific staff and Ph.D. students for taking care about the guests' arrival/departure (Daniel Gajda, Grzegorz Gajda) and registration (Hanna Lochmajer, Michał Babij), and for the technical support during the sessions (Krzysztof Domieracki, Kamil Ciesielski).

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Krzysztof Rogacki

Dariusz Kaczorowski

Adam Pikul

(Chairman of the Conference) (Chairman of the Programme Committee) (Editor of the Proceedings)