

Proceedings of the XV-th National School
“Hundred Years of Superconductivity”

Kazimierz Dolny, October 9–13, 2011

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WARSAW

POLISH ACADEMY OF SCIENCES
INSTITUTE OF PHYSICS

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Preface

In the year 2011 we are celebrating centennial anniversary of the great experimental discovery of superconductivity in mercury by the Leiden group conducted by H.K. Onnes. The discovery turned out to be one of the most spectacular scientific achievements which strongly influenced various sub-fields of physics and provided useful applications for the modern technology. On this particular occasion the solid state group from the Institute of Physics at M. Curie-Skłodowska University in Lublin organized the XV-th National School “Hundred Years of Superconductivity” held on October 9-13, 2011 in Kazimierz Dolny (Poland). Co-organizer of the School was the Physics Branch of the Polish Academy of Sciences in Warsaw.

The established 25 years old tradition of the National Schools on superconductivity goes back to the first meeting organized in Warsaw in spring 1987, just after the discovery of the high temperature cuprate superconductors. Since then it has been organized every two years or so by several Polish research institutions from Warsaw, Cracow, Wrocław, Poznań, Lublin, Szczecin and Gdańsk. The Lublin group has organized such School for the third time. The opening talk has been delivered by professor M. Rogatko (MCSU, Lublin) who presented *Brief lecture on the Universe*.

XV-th National School gave an opportunity for the researchers to discuss the most recent news on various aspects of such superconducting materials as: cuprate oxides, strontium ruthenates, heavy fermion compounds, ultracold atom quantum superfluids, iron based pnictides as well as other related issues concerning the applications, heterostructures, topological materials, etc. The School has been attended by 86 participants, among them 8 colleagues working abroad. Besides the regular tutorial lectures given by the worldwide recognized experts the organizers selected additional oral presentations by the young researchers and/or Ph.D. students. All participants could as usually present the posters. To emphasize the centennial anniversary it has been organized the historical session with six lectures among them one by prof. T. Skośkiewicz who recalled his discovery of superconductivity in palladium hydrides and the inverse isotope effect in palladium deuterides and another one by prof. A. Kołodziejczyk, who discovered coexistence of ferromagnetism and superconductivity in Y_9Co_7 . Furthermore, during one of the evening sessions the participants congratulated professor Karol Wysokiński on the occasion of His 60-th birthday.

In this issue we publish a few of the invited talks and selected oral and poster contributions. We kindly thank all the attendees for their participation and for creating very friendly and exciting scientific atmosphere during the conference. The next meeting in a row will be organized by the Jagellonian University in Cracow.

Organizers of the XV National School