Proceedings of the XIII National School
SUPERCONDUCTIVITY, SPIN
AND CHARGE ORDERING
Lądek Zdrój, November 6–10, 2007

Editor of the Proceedings
Krzysztof Rogacki

WARSAW
POLISH ACADEMY OF SCIENCES
INSTITUTE OF PHYSICS

Organizers of the School:

National Scientific Network:
"Materials with Strongly Correlated Electrons"
Institute of Low Temperature and Structure Research,
Polish Academy of Sciences, Wrocław
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Preface

The XIII National School "Superconductivity, Spin and Charge Ordering" was held from November 6 till November 10, 2007 in Lądek Zdrój and was devoted to new and intriguing phenomena observed in superconductors and other related materials. Both fundamental and applied physics was widely represented in 33 oral and 50 poster presentations by more than 100 participants from 21 national and 3 international scientific institutions. The participants came from: Gdańsk (3), Katowice (10), Kraków (17), Lublin (7), Poznań (24), Warsaw (19), Wrocław (24), Argonne (1), Kyiv (1), and Zurich (1). The emphases of the School were:

- two-band superconductivity and unconventional vortex dynamics in MgB_2,
- interaction of magnetism and superconductivity in bulk materials and nanodimensional heterostructures,
- orbital and spin ordering in manganite materials,
- still not fully comprehensible features of the pseudogap,
- remarkable properties of the frustrated networks, Kondo lattice and quantum dots,
- spin–triplet pairing and non-phonon mechanisms in new superconductors,
- and several other topical issues of the solid state physics.

Detailed program may be found at the website: http://apollo.int.pan.wroc.pl/ksn13/.

Apart from pure scientific presentations we have heard very interesting inaugural lecture on the relation between science and philosophy, literature, and poetry, given by Zygmunt M. Galasiewicz, the retired Professor of the Wrocław University. The lecture was entitled "How homo sapiens have grown up to the scientific cognition of the universe. The fragments from the belles-lettres related to science". Prof. Galasiewicz has presented in a special way achievements of the creators of physics starting from Tales from Milet to the authors of the contemporary Theory of Everything. The fragments related to science have been chosen and quoted from text of following writers and poets: L. Carroll, J.W. Göthe, J. Joyce, L. Lederman, Lukrecius, A. Mickiewicz, J. Milton, M. Proust, H. Sienkiewicz, and W. Szymborska. For example, M. Proust writes in one of his novel: "... And Françoise answered laughing: Madame, you know everything. You are worse than the X-rays". The full article is considered to be published in *Postępy Fizyki* in Polish.

The supporters and financial sponsors of the School are listed as organizers in the previous page. We express our great thanks to all of them. We also would like to thank Mrs. Bożena Dobrowolska-Nierzewska who organized matters large and small with discretion and great efficiency, and to M.Sc. Maciej Kazimierski who helped us to prepare the Abstract Booklet. Finally, we appreciate significant contributions to the School from all participants.

Organizing Committee
and Editor of the Proceedings

List of speakers

M. Cieplak (Warszawa)
K. Czajka (Katowice)
B. Dabrowski (DeKalb, USA)
V. Dmitriew (Wrocław)
T. Domański (Lublin)
A. Donabidowicz (Lublin)
Z. Galasiewicz (Wrocław)
P. Gierłowski (Warszawa)
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K. Rogacki (Wrocław)
J. Spałek (Kraków)
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H. Szymczak (Warszawa)
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