

Proceedings of the
XLIVth Zakopane School of Physics
International Symposium
*Breaking Frontiers: Submicron Structures
in Physics and Biology*
Zakopane, Poland, May 18–23, 2009

Editors of the Proceedings:

Wojciech M. Kwiatek

Marta Wolny-Marszałek

WARSAW

POLISH ACADEMY OF SCIENCES
INSTITUTE OF PHYSICS



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Preface

The XLIVth Zakopane School of Physics, International Symposium “Breaking Frontiers: Submicron Structures in Physics and Biology” was held as usual in Zakopane, Poland, May 18–23, 2009. The participants of the meeting heard reports on a wide variety of research topics related to: condensed matter physics and biology of objects with reduced dimensions, as well as new developments in synchrotron physics and some historical reflections. More than half of papers were related to application of X-ray radiation in materials science, with particular emphasis on studies of biological systems. Other major area of interest were the novel magnetic nanomaterials. The program consisted of 20 invited talks, 12 oral presentations and 17 contributed papers in the form of posters. Unfortunately, only 15 papers are included in this issue, covering the whole spectrum of research fields. About 60 participants from 11 countries attended the meeting. A special session was organized devoted to the problems and particularities of project applications in 7th Framework Program of EU.

This meeting provided also the opportunity for discussion on the exciting developments and achievements of sub-micron physics in both condensed matter and biomaterials.

The editors are grateful to the authors and referees for their joint effort contributing to the scientific quality of these proceedings. Special acknowledgments are addressed to Prof. Witold Dobrowolski and Mr. Zbigniew Gawryś for their help and assistance in the production of these proceedings. The Committee of Physics and the Office of International Relations of the Polish Academy of Sciences, as well as the Hamamatsu, Bruker, and AE companies are heartily acknowledged for the generous support of the meeting.

Such a wonderful event which was this Zakopane School would not be possible to organize without the help of our young enthusiastic students who did most of the technical work such as administration of the webpage, designing all graphics for program, book of abstracts, conference poster, taking care of technical devices in conference room and organizing the leisure activities. Thank you all of them!

The good atmosphere during the event promoted making a new scientific contacts and cooperations, gaining a new knowledge from experienced lecturers, and at last but not at least it learned the new generation to be a part of the huge nanophysics community.

Chairman of the Conference

Assoc. Prof. Marta Marszałek

XLIVth Zakopane School of Physics, list of participants of International Symposium
“Breaking Frontiers: Submicron Structures in Physics and Biology”

Józef Barnaś	(Poznań)
Jarosław Baszak	(Warszawa/Hamamatsu)
Jakub Bielecki	(Kraków)
Sebastian Bożek	(Kraków)
Rudolf Bratschitsch	(Konstanz)
Christian Bressler	(Lausanne)
Harald Brune	(Lausanne)
Alicja Defort	(Zielona Góra)
Agnieszka Dobrowolska	(Kraków)
Katarzyna Dziedzic-Kocurek	(Kraków)
Henryk Fiedorowicz	(Warszawa)
Rui Pedro Goncalves	(Lausanne)
Giso Hahn	(Konstanz)
Justyna Jaczewska	(Kraków)
Markus Janousch	(Villigen)
Koen Janssens	(Antwerp)
Ewa Jędryka	(Warszawa)
Felix Jimenez-Villacorta	(Grenoble)
Mariola Kądziołka-Gaweł	(Katowice)
Olesya Klymenko	(Kraków)
Peter Knief	(Dublin)
Joanna Kowalska	(Kraków)
Maciej Kozak	(Poznań)
Michał Krupiński	(Kraków)
Danuta Krzysztoń	(Kraków)
Agnieszka Kulińska	(Kraków)
Wojciech M. Kwiatek	(Kraków)
Małgorzata Lekka	(Kraków)
Janusz Lekki	(Kraków)
Barbara Lysoń	(Kraków)
Dariusz Marek	(Poznań/Bruker)
Marta Wolny-Marszałek	(Kraków)
Gema Martinez-Criado	(Grenoble)
Denes Nagy	(Budapeszt)
Małgorzata Niewiara	(Kraków)
Piotr Nowak	(Kraków)
George Palasantzas	(Groningen)
Jerzy Pełka	(Warszawa)
Marcin Perzanowski	(Kraków)
Aleksander Polit	(Kraków)
Veronika Poor	(Bristol)
Christian Schroer	(Dresden)
Walter Schwarzacher	(Bristol)
Natalia Shumakova	(Sumy)
Mateusz Skaloń	(Kraków)
Zbigniew Stachura	(Kraków)
Katarzyna Suchanek	(Kraków)
Oksana Synashenko	(Sumy)
Aleksandra Szkudlarek	(Kraków/Zaragoza)
Popi Trohidou	(Athens)
Maciej Urbaniak	(Poznań)
Gyorgy Vanko	(Budapeszt)
Przemysław Wachulak	(Warszawa)
Yevhen Zabila	(Kraków)
Giuseppe Zaccai	(Grenoble)

**XLIV Zakopane School of Physics
International Symposium
18-23 May 2009, Zakopane, Poland**



**Breaking Frontiers:
Submicron Structures
in Physics and Biology**

Editors of the proceedings:

**Marta Marszałek
Wojciech M. Kwiatek**

first row

1	George	Palasantzas	Groningen
2	Barbara	Łysoń	Kraków
3	Jakub	Bielecki	Kraków
4	Justyna	Jaczevska	Kraków
5	Agnieszka	Kulińska	Kraków
6	Katarzyna	Suchanek	Kraków
7	Wojciech	Kwiatek	Kraków
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9	Mariola	Kądziołka-Gaweł	Katowice
10	Aleksandra	Szkudlarek	Kraków/ Zaragoza
11	Katarzyna	Dziedzic-Kocurek	Kraków
12	Ewa	Jędryka	Warszawa

second row

13	Józef	Barnaś	Poznań
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16	Alicja	Defort	Zielona Góra
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19	Denes	Nagy	Budapest
20	Urszula	Woźnicka	Kraków
21	Joanna	Kowalska	Kraków
22	Veronika	Poor	Bristol
23	Natalia	Shumakova	Sumy
24	Maciej	Urbaniak	Poznań
25	Małgorzata	Niewiara	Kraków
26	Sebastian	Bożek	Kraków

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28	Janusz	Lekki	Kraków
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30	Piotr	Nowak	Kraków
31	Oksana	Synashenko	Sumy
32	Rui Pedro	Goncalves	Lausanne
33	György	Vankó	Budapest
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35	Harald	Brune	Lausanne
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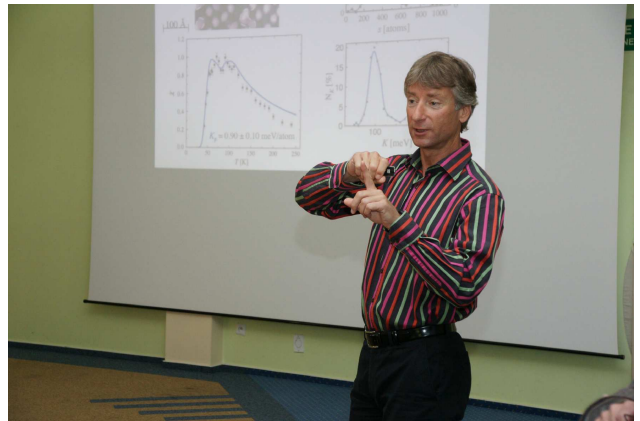
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45	Yevhen	Zabila	Kraków





Lectures...



... and leisure activities

