Advances in Solid State Physics

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With 277 Figures and 20 Tables

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Advances in Solid State Physics

Advances in Solid State Physics is a book series with a history of over 40 years. It contains the invited lectures presented at the Spring Meetings of the "Arbeitskreis Festkörperphysik" of the "Deutsche Physikalische Gesellschaft", held in March of each year. The invited talks are intended to reflect the most recent achievements of researchers working in the field both in Germany and worldwide. Thus the volume of the series represent a continuous documentation of most recent developments in what can be considered as one of the most important and active fields of modern physics. Since the majority of invited talks are usually given by young researchers at the start of their career, the articles can also be considered as indicating important future developments.
The speakers of the invited lectures and of the symposia are asked to contribute to the yearly volumes with the written version of their lecture at the forthcoming Spring Meeting of the Deutsche Physikalische Gesellschaft by the Series Editor early before the meeting.
Advances in Solid State Physics is addressed to all scientists at universities and in industry who wish to obtain an overview and to keep informed on the latest developments in solid state physics. The language of publication is English.
See also: http://www.springer.de/phys/books/assp/

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Preface

The 2001 Spring Meeting of the 65th Deutsche Physikalische Gesellschaft was held together with the 65. Physikertagung, in Hamburg, during the period March 26–30 2001. With more than 3500 conference attendees, a record has again been achieved after several years of stabilisation in participation. This proves the continuing and now even increasing, attraction of solid state physics, especially for young colleagues who often discuss for the first time their scientific results in public at this meeting. More than 2600 scientific papers were presented orally, as well as posters, among them about 120 invited lectures from Germany and from abroad. This Volume 41 of "Advances in Solid State Physics" contains the written versions of half of the latter. We nevertheless hope that the book truly reflects the current state of the field. Amazingly enough, the majority of the papers – as well as the discussions at the meeting, – concentrated on the *nanostructured* solid state. This reflects the currently extremely intensive quest for developing the electronic and magnetic device generations of the future, which stimulates science besides the challenge of the unknown – as has always been the case since the very beginning of Solid State Physics about 100 years ago.

This volume of the "Advances" series is now for the first time published by Springer-Verlag. Also for the first time, its contents will be available via the Internet. We hope that this will considerably help to disseminate the knowledge collected in the various contributions to a much broader audience than ever before.

Hamburg, May 2001 *Bernhard Kramer*

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