

FESTKÖRPERPROBLEME

ADVANCES IN SOLID STATE PHYSICS 28

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# **ADVANCES IN SOLID STATE PHYSICS 28**

Plenary Lectures of the 52nd Annual  
Meeting of the German Physical Society (DPG)  
and of the Divisions

“Semiconductor Physics”

“Dynamics and Statistical Physics”

“Thin Films”

“Surface Physics”

“Low Temperature Physics”

“Magnetism”

“Metal Physics”

Karlsruhe, March 14 ... 18, 1988

Edited by  
U. Rössler, Regensburg

With 110 Figures



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## Foreword

The spring meeting 1988 of the Solid State Physics Division (Arbeitskreis Festkörperphysik) of the Deutsche Physikalische Gesellschaft was held in Karlsruhe together with the 52<sup>nd</sup> Annual Plenary Conference of the society. A selection of plenary and invited talks of this conference is published in this volume of *Advances in Solid State Physics/Festkörperprobleme*. It will become apparent from the contents, that this selection is not representative for the wide spectrum of topics presented at the conference. But, unfortunately, several speakers who were invited to contribute to this volume, did not provide manuscripts because of current or more recent publications in their respective fields, or because of lack of time.

With the exception of a review on the theory of high- $T_c$ -superconductors all contributions are devoted to current topics in semiconductor physics. This years winner of the Walter-Schottky Prize, M. Stutzmann, reports on his contributions to an understanding of the interrelation between electronic density of states and structural relaxation in hydrogenated amorphous Silicon. Two articles report on magneto-optical and microwave investigations of the quantum-Hall effect. Theoretical aspects of semiconductors under high excitation conditions, the fabrication of the 4 Mega-bit random access memory, and the physics of semiconductor microstructures under the aspects of reduced dimensionality complete the list of topics.

It is a pleasure to thank the authors for their contributions, and Björn Gondesen (Vieweg-Verlag) for his cooperation. I express my gratitude to Peter Grosse, the former editor, for the work he did for the "Festkörperprobleme" and for his advice and help, when I took over this job last fall.

Regens, May 1988

*Ulrich Rössler*

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