Quantum Confined Semiconductor Nanostructures

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Quantum Confined Semiconductor Nanostructures

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PREFACE

Continued progress in nanoscale engineering, as well as an improved understanding of the physical phenomena at the nanometer scale, have contributed to the rapid development of novel nanostructured semiconducting materials and nanodevices. Using both "top-down" and "bottom-up" approaches, novel semiconductor structures can be fabricated with sub-nanometer accuracy and precisely controlled electronic and optical properties. The immense technological potential and new exciting physics have stimulated increasing interest in semiconductor nanostructures over the past several years.

Symposium E, " Physics and Technology of Semiconductor Quantum Dots," and Symposium F, "Nanocrystalline Semiconductor Materials and Devices," held December 2–5 at the 2002 MRS Fall Meeting in Boston, Massachusetts, were organized to provide a comprehensive forum for discussion of the most recent progress and the future directions in the nanoscale semiconductor research. These symposia brought together researchers from a variety of fields: materials science, physics, chemistry, electrical and microelectronic engineering, circuit design, etc. Each four-day symposium included four sessions for oral presentations and two evening sessions for poster presentations. In addition, Symposium F hosted the MRS Medal Award presentation by Prof. C.M. Lieber, which was attended by more than 400 people. Both symposia attracted more than 250 participants. The remarkable interest in topics discussed at these symposia demonstrates deep and continued commitment on the part of researchers and institutions worldwide, and suggest that the most interesting developments in the area of nanoscale semiconductors are yet to come.

These joint proceedings of Symposia E and F follow the order of the original symposia programs. We hope that this book reflects the exciting progress in the field of semiconductor nanostructures and will stimulate further interest to this area of research.

In conclusion, the editors would like to thank the authors, speakers, and session chairs of both symposia. Our special thanks go to the MRS staff for their tireless assistance to the organizers during the Meeting and during preparation of this volume.

Victor I. Klimov
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