

Preface

Professor Yoseph (Joe) Imry was one of the initiators and has been one of the leaders of **mesoscopic physics** for several decades. This book contains articles by leading (theoretical and experimental) scientists working in **nanoscience** and in related fields. Most of the contributions, which contain both reviews of the state of the art and new results, summarize invited talks given at two conferences dedicated to Imry's 70th birthday: "the 101st Statistical Mechanics Conference", held at Rutgers University on May 10–12, 2009, and "Perspectives of Mesoscopic Physics", held at the Weizmann Institute of Science on May 31–June 1, 2009. The book covers a broad range of active research in nanoscience, including topics like quantum interference and the Aharonov–Bohm effect, decoherence and dephasing, quantum noise, electron correlations, the Kondo effect, the quantum Hall effect, nano superconductors, nano magnets, nano electromechanical devices, molecular junctions, ordered and disordered rings, nonequilibrium, glassy behavior and more. We expect this book to be of use to researchers and to graduate students in the broad fields of mesoscopic physics and nanoscience.

We are grateful to all the authors who agreed to contribute to this book, and were very cooperative at the various stages of its growth. We are also grateful to the staff of World Scientific, especially to Ms. Fang Zhang and Mr. Rajesh Babu, who helped with the technicalities of the book's production. The figure on the cover was kindly contributed by H  l  ne Bouchiat.

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