

Preface

Optimization is a multidisciplinary research field that deals with the characterization and computation of minima and/or maxima (local/global) of nonlinear, nonconvex, nonsmooth, discrete, and continuous functions. Optimization problems are frequently encountered in modelling of complex real-world systems for a very broad range of applications including industrial and systems engineering, management science, operational research, mathematical economics, seismic optimization, production planning and scheduling, transportation and logistics, and many other applied areas of science and engineering. In recent years there has been growing interest in optimization theory.

The present volume contains 16 full-length papers that reflect current theoretical studies of generalized convexity and its applications in optimization theory, set-valued optimization, variational inequalities, complementarity problems, cooperative games, and the like. All these papers were refereed and carefully selected from those delivered at the Advanced Training Programme on Nonconvex Optimization and Its Applications held at the DST-Centre for Interdisciplinary Mathematical Sciences, Department of Mathematics, Banaras Hindu University, Varanasi, India, March 22–26, 2010.

I would like to take this opportunity, to thank all the authors whose contributions make up this volume, all the referees whose cooperation helped in ensuring the scientific quality of the papers, and all the people from the DST-CIMS and Department of Mathematics, Banaras Hindu University, whose assistance was indispensable in running the training programme. I would also like to thank to all the participants of the advanced training programme, especially those who travelled a long distance within India in order to participate. Finally, we express our appreciation to Springer for including this volume in their series. We hope that the volume will be useful for students, researchers, and those who are interested in this emerging field of applied mathematics.

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Theory and Applications

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