

PREFACE

This second volume of *Advances in Dynamics, Instrumentation and Control* is a compilation of 43 articles representing the scientific and technical advances in various aspects of *System Dynamics, Instrumentation, Measurement Techniques, Simulation* and *Controls*. These articles were selected on the basis of rigorous review of over 150 articles submitted for presentation at the Second International Conference of *in Dynamics, Instrumentation and Control* (CDIC'06), held in Querétaro, Mexico, 13-16 August 2006. The conference was organized by *Consejo de Ciencia y Tecnológica del Estado de Querétaro* (CONCYTEQ) jointly with *Concordia University*, Montréal, Canada, with a focus to address the scientific and technological challenges in system dynamics, instrumentation and control, by creating a forum for exchange of knowledge among the experts from the world. This second conference was co-sponsored by Montreal and Querétaro Sections of IEEE, Autonomous University of Querétaro, Canadian Society for Mechanical Engineering (CSME), American Society of Mechanical Engineers (ASME) Québec chapter, Querétaro Institute of Technology and Querétaro Campus of Monterrey Technological Institute. The final technical program featured over 80 stimulating regular technical presentations. In addition, the delegates were very privileged and honored to have the keynote addresses delivered by three leading experts in the field: *Dr. Meyya Meyyappan* from NASA (USA) on Nanostructures and their applications; Professor *Tianyou Chai*, Northeastern University (China) on Hybrid intelligent optimal control methods; and *Dr. Robert Mullins*, Bell-Helicopters-Textron (USA) on the Engineer of 2020. The delegates also participated on a panel discussion on University-Industry Challenge together with representatives from Bombardier Aerospace (Querétaro, Mexico).

The articles included in this volume have undergone a thorough referring process and represent state-of-the-art contributions in the fields of dynamics and control of nonlinear, hybrid and stochastic systems; nonlinear control theory; vehicular dynamics; adaptive, model predictive and real-time controls; fault diagnostics; and manufacturing systems. The contributions of the technical program committee and the referees are deeply appreciated. Most of all, we would like to express our sincere thanks to the authors for submitting their most recent works and for the patience they have shown during the review process. Special thanks are due to Mr. Steven Patt of the World Scientific Publishing (UK) for enthusiastically supporting this project.

We sincerely hope that this second volume will prove to be an important resource for the scientific community.

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