

Foreword



Prof. Subhash C. Sinha

It is my pleasure to present the inaugural issue of the *Journal of Computational and Nonlinear Dynamics* (JCND). The purpose of the Journal is to provide a medium for rapid dissemination of original research results in theoretical as well as applied computational and nonlinear dynamics. The Journal should serve as a forum for exchange of new ideas and applications in computational, rigid and flexible multibody system dynamics and all aspects (analytical, numerical and experimental) of dynamics associated with nonlinear systems. The broad scope of the Journal encompasses all computational and nonlinear problems occurring in mechanical, physical and biological systems. In the computational and multibody systems dynamics area, topics include novel formulations and algorithms for computation in kinematics and dynamics of rigid and flexible systems; application of finite element and finite difference methods in dynamics; numerical approaches in synthesis, optimization and control; and parallel computations and software development, among others. Topics in the nonlinear dynamics area cover new theories and principles in dynamical systems; symbolic, perturbation and computational techniques; dynamic stability, bifurcation and control; chaos, fractals and pattern formation in physical and biological systems; system modeling, identification and experimental methods; frictional and discontinuous dynamical processes, etc. The JCND is a quarterly journal and publishes full-length original contributions, review articles and technical briefs on these topics and related areas.

I believe that such a journal from ASME was long overdue considering the fact that in recent years the areas of multibody systems and nonlinear dynamics have attracted an unprecedented attention on a global basis. Further, large symposia have also been organized on a regular basis on these topics for the past several years with the ASME International Design Engineering Technical Conferences. The sustained organizational effort from some of our active colleagues paid off, and a new technical committee on Multibody Systems and Nonlinear Dynamics (MSND) was formed, where the idea of having such a journal crystallized. In particular, I am very thankful to committee members Kurt Anderson, Harry Dankowicz, Tamás Kalmár-Nagy and Ahmed Shabana for their relentless help in putting together a very fine proposal for the JCND, which obviously was approved by the Publications Directorate of ASME. I would also like to thank other members of the MSND, the DED Executive Committee, the Publications Directorate and Philip Di Vietro, Director, ASME Technical Publishing, for giving me the privilege to serve as the “Founding Editor” of the JCND.

It is rather gratifying to see the inaugural issue of the JCND in print; however, it is just the beginning and a long road lies ahead. During my tenure as the Editor of the Journal, I would like to see the Journal flourish in a number of ways—the number and quality of submissions must steadily climb, JCND should become the journal of choice among the best researchers around the world, it should be covered in engineering and science citation indexes, and, on the average, an article in JCND should take the least amount of time from submission to production as compared to other ASME journals. I know it is not going to be easy to achieve these goals, but with your help I am sure they are realizable. Whether you are a reader, an author, a reviewer or an Associate Editor (or all of the above), I appeal to you to do your best in every chance you get to push the Journal forward toward meeting its goals. In particular, I would like to ask all reviewers and Associate Editors to make a strong commitment to expedite the reviewing process. On-time publication is extremely important for a journal to become a part of the citation index.

Since this issue consists of invited articles only, I am very thankful to all authors who graciously agreed to submit their manuscripts even though in many cases there was not enough time for preparation and/or revision. This inaugural issue represents a good mix of papers in the general areas of multibody system dynamics and nonlinear dynamics with a wide range of applications. I expect future issues of JCND to reflect a bit broader but similar structure, of course, making room for new topics and ideas as they arise.

With the help of ASME Staff (particularly Colin McAteer), I planned the inaugural issue of the JCND to be available during the IDETC 2005 so that all attendees can get a first-hand look at the Journal. In particular, I would like to appeal to the authors of the 5th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC) and the 20th Biennial Conference on Mechanical Vibration and Noise (VIB) to consider the *Journal of Computational and Nonlinear Dynamics* as the main vehicle for dissemination of their latest research that lies within the scope of the Journal.

Once again I thank you all for the opportunity, and if you have any suggestions or complaints, I would like to hear from you.

Subhash C. Sinha
Editor