

Call for Book Chapters
Recent Advances in Nonlinear Dynamics and Synchronization (NDS-1) – Theory and Applications

Title: Recent Advances in Nonlinear Dynamics and Synchronization (NDS-1)—Theory and Applications

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Introduction

This book is calling for contributions covering amongst others the development of methods (algorithms/tools) for the modeling, analysis and design approaches to explain, predict, and respectively control synchronization phenomena and coherent behavior in real nonlinear dynamical systems. These may be engineering systems, social or economical systems, or even biological systems. Examples of engineering systems are: robots, devices for power electronics, vehicles dynamics and their control, supply chain networks, electrical circuits, and electromechanical systems, just to name a few. But the scope is not limited only to these systems. Further, as an emerging field, the study of synchronization and its control in such classes of dynamical systems has so far not seen sufficiently strong connections between theory and the actual behavior of real systems. Therefore, there is a strong need for a consistent presentation of the related state-of-the-art and of major active research avenues over the broad area of nonlinear dynamics and synchronization.

Chapters are being sought from researchers and others involved in either theory or application of nonlinear dynamics and synchronization concepts in following areas:

- Nonlinear systems and synchronization
- Theoretical fundamentals of synchronization
- Experiments of nonlinear dynamics and/or synchronization
- Simulation of nonlinear dynamics and synchronization
- Applications of nonlinear dynamics and synchronization;

Examples of Systems:

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| ▪ Self-organized transportation systems | ▪ Self-reconfigurable systems |
| ▪ Traffic management | ▪ Self-healing systems |
| ▪ Cybernetics | ▪ Oscillatory systems |
| ▪ Systems control | ▪ Nonlinear circuits |
| ▪ Robotics | ▪ Cellular neural networks |
| ▪ Signal processing | ▪ Communications systems |
| ▪ Image and video processing | ▪ Security and cryptography |
| ▪ Supply chains and logistics systems | ▪ Bio-computing and bio-chemistry |
| ▪ Production systems | ▪ Social sciences and economy |
| | ▪ Analog computing systems and/or platforms |
| | ▪ etc. |

Authors are invited to submit a short proposal (500 words maximum) describing the topic and scope of the proposed chapter.

Important dates include:

1. **Deadline for submission of short proposals: September 15th, 2008**
2. Proposals selected/ approved for full article submission: September 30th 2008
3. Deadline for submission of full articles: November 30th 2008
4. Author notification after review process: January 5th, 2009
5. Expected date for publication: First Quarter of 2009.

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