

The 6th International Workshop on Emergent Synthesis



in cooperation with
CIRP Workshop on Engineering as Collaborative Negotiation

August 18-19, 2006, Kashiwa, Japan
Research into Artifacts, Center for Engineering,
The University of Tokyo
<http://www.race.u-tokyo.ac.jp/IWES06/>



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Organized by IWES'06 Organizing Committee

SPONSORS:

- International Institution for Production Engineering Research (CIRP)
- Research into Artifacts, Center for Engineering (RACE), The University of Tokyo
- Technical Committee on Co-creation System, System Integration Division, SICE

SCOPE OF THE WORKSHOP:

Emergent Synthesis is a new research direction in engineering science that was proposed and substantiated at the 1st Workshop on Emergent Synthesis held at Kobe University, 1998. The key questions of emergent synthesis are related to the design, manufacturing, utilization, and consumption of artifacts. In the new era we face an increasing complexity and uncertainty that arises from factors such as the diversification of culture, individualisation of lifestyle, globalisation of industrial activities, and a growing concern toward our natural environment. The increasing complexity and uncertainty bring about practical and theoretical difficulties in each domain of artifactual activities, from the planning phase up to post sales. Non-linear phenomena, incomplete data and knowledge, combinatorial explosion of states, dynamic changes in environment and bounded rationality are some notable examples of these difficulties. The central question is realising an artifactual system that achieves its purpose under unpredictable conditions. It is difficult to approach problems like this by using traditional engineering principles, such as analysis and determinism. Methodologies based on emergent synthesis are to be investigated. Emergent Synthesis as a transdisciplinary area has strong connections to the fields of artificial life, artificial intelligence, multi-agent systems, evolutionary and emergent computation, game theory, complex adaptive systems, co-creation, and self-organization.

The Workshop's objective is to provide an international forum to discuss the state-of-the-art of emergent synthesis, to disseminate the recent advances and to share views on perspectives of this area.

TOPICS:

The Workshop will cover a range of topics - from philosophical studies and theoretical developments to practical applications - that are relevant to emergent synthesis. Topics of interest include but are not limited to:

- concepts for emergence toward engineering synthesis,
- design theory with relation to emergence,
- modelling and simulation of emergent systems,
- emergent synthesis methods for the design and manufacturing systems,
- emergent computation for utilizing artifactual systems,
- emergent synthesis for decision making in social systems,
- applications to technical and economic systems.

SUBMISSION OF ABSTRACTS:

Initial paper selection will be based upon extended abstracts. An abstract should present a clear and concise view of the motivation of the subject, and give a brief outline (goals, methods, results) of the paper in English with about 800-1000 words. It may include figures. Abstracts should be submitted electronically as PDF files to the Workshop Secretariat by March 31, 2006. Three to five keywords should be given. Please, include the full name, affiliation, full address, telephone and fax numbers, and e-mail address of the corresponding author.

PUBLICATION:

Authors of the accepted abstracts will be required to submit the final version of their papers, written within 6-10 pages (two-column format, 10pt font) by June 15, 2006. The corresponding LaTeX and MS Word styles will be available on the Workshop Web site (<http://www.race.u-tokyo.ac.jp/IWES06/>). All the accepted papers will be published in the Workshop Proceedings, and selected papers will be published in Elsevier Journal.

REGISTRATION:

The registration fee (JPY 20000) will cover the workshop proceedings, coffee breaks, and a small get-together evening party. The registration fee for students is JPY 5000. Travel fee will be partially supported for young authors from overseas according to the paper review results.

BEST PAPER AWARD:

The best paper award is constituted. Authors of two selected papers will be awarded. All the authors are kindly invited to participate.

IMPORTANT DATES:

Submission of abstracts: March 31, 2006
Notification of acceptance: April 14, 2006
Camera-ready manuscript: June 15, 2006
Conference date: August 18-19, 2006

For further information, please contact:

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RELATED EVENT:

The 56th CIRP General Assembly
August 21-26, 2006, Kobe, Japan

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