

**JAIST FORUM 2004**

**Technology Creation Based on Knowledge Science:  
Theory and Practice**

Japan Advanced Institute of Science and Technology (JAIST)

November 10 - 12, 2004

Ishikawa High-Tech Exchange Center  
2-1 Asahidai, Tatsunokuchi, Ishikawa

## Preface

The knowledge that creates science and technology is the most valuable resource for a science and technology oriented country like Japan. Japan should promote activities to create such knowledge in theory and practice. The school of Knowledge Science at JAIST has been producing important theories and systems to manage existing knowledge and create new knowledge in the field of management science.

The purpose of the Center of Excellence (COE) Program: Technology Creation Based on Knowledge Science is to apply knowledge science to the creation of advanced technology, and in the process of this application, to develop new theories of systematic knowledge creation.

In this forum we introduce some transdisciplinary research projects, through which we provide an advanced model of planning and promoting important research fields. At the same time, we are organizing the 5th International Symposium on Knowledge and Systems Sciences. During this 3-day conference at the Ishikawa High-Tech Exchange Center, the following topics will be discussed.

Nov. 10: Methodologies for Knowledge Integration and Creation

Nov. 11: Knowledge Management and Creativity Support

Nov. 12: Knowledge and Systems Sciences (Plenary Lectures in the Symposium)

We welcome any opinions or suggestions you may have about JAIST or the COE program.

Sukekatsu Ushioda  
President of JAIST

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MEXT (Ministry of Education, Culture, Sports, Science and Technology) 21st COE Program  
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Ishikawa Prefecture  
Kanazawa City  
Tatsunokuchi Town  
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JAIST FORUM 2004

Technology Creation Based on Knowledge Science: Theory and Practice

November 10, Wednesday, Ishikawa High-Tech Exchange Center

**Theme: Methodologies for Knowledge Integration and Creation**

- 09:00-10:00**    **Registration**
- 10:00-10:20**    **Opening Address**  
Sukekatsu Ushioda (President, JAIST)
- 10:20-10:50**    **Introduction to a COE Program at JAIST**  
Yoshiteru Nakamori (Program Leader, JAIST)
- 10:50-11:00**    break
- 11:00-11:30**    **Self-Reflection, Self-Awareness and Knowledge Creation**  
Masahiro Takagi (School of Materials Science, JAIST)
- 11:30-12:00**    **Knowledge Management for Science and Technology Research and Development in Academic Laboratories**  
Quamrul Hasan (Strategic Center, JAIST)
- 12:00-13:30**    lunch break
- 13:30-14:20**    **Creative Space and Creative Environments**  
Andrej P. Wierzbicki (Strategic Center, JAIST)
- 14:20-15:10**    **Exploring a Sociologist Underpinning for the *i*-System**  
Zhichang Zhu (University of Hull, UK)
- 15:10-15:40**    coffee break
- 15:40-16:30**    **Knowledge Management Systems and Business Processes**  
John S. Edwards (Aston University, UK)
- 16:30-17:20**    **Creative Holism: Critical Systems Thinking & Critical Systems Practice**  
Michael C. Jackson (University of Hull, UK)
- 18:00-19:30**    **Reception in High-Tech Exchange Center**

JAIST FORUM 2004

Technology Creation Based on Knowledge Science: Theory and Practice

November 11, Thursday, Ishikawa High-Tech Exchange Center

**Theme: Knowledge Management and Creativity Support**

- 09:00-09:50**     **Knowledge Management in Technology Creating Labs**  
Katsuhiro Umemoto (School of Knowledge Science, JAIST)
- 09:50-10:40**     **Knowledge Management in the Experimental Nanochemistry Laboratory –Trial and  
Future Vision–**  
Shigenori Fujikawa (RIKEN, Japan)
- 10:40-11:10**     coffee break
- 11:10-12:00**     **Innovation by System-Integration and its Knowledge Integration Problem**  
Zhongtuo Wang (Dalian University of Technology, China)
- 12:00-13:30**     lunch break
- 13:30-14:20**     **Creativity Support Systems in JAIST**  
Susumu Kunifuji (School of Knowledge Science, JAIST)
- 14:20-15:10**     **Understanding the Potential of Digital Technology for Collaborative Creative  
Knowledge Work**  
Linda Candy (University of Technology, Sydney, Australia)
- 15:10-15:40**     coffee break
- 15:40-16:30**     **Expressive Intention: Representations of Knowledge for Generative Artworks**  
Ernest A Edmonds (University of Technology, Sydney, Australia)
- 16:30-17:20**     **Knowledge Creation, Integration, and Dissemination in Design Communities**  
Gerhard Fischer (University of Colorado, USA)

KSS2004: 5<sup>th</sup> International Symposium on Knowledge and Systems Sciences

November 12, Friday, Ishikawa High-Tech Exchange Center

**Plenary Lectures in KSS2004**

- 09:00-09:30**    **How to Synthesize Experts Opinions - Building Consensus from Different Perspectives**  
Jifa Gu (Chinese Academy of Sciences, China)
- 09:30-10:00**    **Exploring Computerized Support for Group Argumentation for Idea Generation**  
Xijin Tang (Chinese Academy of Sciences, China)
- 10:00-10:30**    **Contingent Framework for Supporting Participatory Decision-Making**  
Kyoichi Kijima (Tokyo Institute of Technology, Japan)
- 10:30-11:00**    coffee break
- 11:00-11:30**    **Crude Oil Price Forecasting with TEI@I Methodology**  
Shouyang Wang (Chinese Academy of Sciences, China)
- 11:30-12:00**    **Modeling Web for Knowledge Integration and Creation**  
Marek Makowski (IIASA, Austria)
- 12:00-12:30**    **Approaches to Performance Analysis and Optimization of Communication Networks**  
Wuyi Yue (Konan University, Japan)
- 12:30-13:30**    lunch break
- 13:30-14:00**    **Application of Knowledge Management in China's Enterprises**  
Yuanzhang Liu (Chinese Academy of Sciences, China)
- 14:00-14:30**    **Knowledge Transfer in Supply Chain: Hold Suppliers' Complementary Knowledge**  
Jian Chen (Tsinghua University, China)
- 14:30-15:00**    **Discussions on the Distance of Information-state Transition**  
Huanchen Wang (Shanghai Jiaotong University, China)
- 15:00-15:30**    coffee break
- 15:30-16:00**    **Scientific Data Mining**  
Tu Bao Ho (School of Knowledge Science, JAIST)
- 16:00-16:30**    **The Mystery of Rough Sets: Links between Topologies and Rough Sets**  
Milan Vlach (Hosei University, Japan)
- 16:30-17:00**    **Flow Graphs – a New Paradigm for Data Mining and Knowledge Discovery**  
Zdzislaw Pawlack (Polish Academy of Sciences, Poland)
- 17:00-17:30**    **Closing Address: Information on KSS and IFSR**  
Taketoshi Yoshida (Secretary General to KSS, JAIST)



## **TABLE OF CONTENTS**

### **JAIST FORUM 2004**

<b>Introduction to a COE Program at JAIST</b> Yoshiteru Nakamori	1
<b>Self-Reflection, Self-Awareness and Knowledge Creation</b> Masahiro Takagi	5
<b>Knowledge Management for Science and Technology Research and Development in Academic Laboratories</b> Quamrul Hasan	7
<b>Creative Space and Creative Environments</b> Andrej P. Wierzbicki	9
<b>Exploring a Sociologist Underpinning for the <i>i</i>-System</b> Zhichang Zhu	25
<b>Knowledge Management Systems and Business Processes</b> John S. Edwards	30
<b>Creative Holism: Critical Systems Thinking &amp; Critical Systems Practice</b> Michael C. Jackson	39
<b>Knowledge Management in Technology Creating Labs</b> Katsuhiro Umemoto	47
<b>Knowledge Management in the Experimental Nanochemistry Laboratory –Trial and Future Vision–</b> Shigenori Fujikawa	48
<b>Innovation by System-Integration and its Knowledge Integration Problem</b> Zhongtuo Wang	51
<b>Creativity Support Systems in JAIST</b> Susumu Kunifuji	56
<b>Understanding the Potential of Digital Technology for Collaborative Creative Knowledge Work</b> Linda Candy	59
<b>Expressive Intention: Representations of Knowledge for Generative Artworks</b> Ernest A Edmonds	67
<b>Knowledge Creation, Integration, and Dissemination in Design Communities</b> Gerhard Fischer	73

## **PLENARY LECTURES IN KSS2004**

<b>How to Synthesize Experts Opinions-Building Consensus from Different Perspectives</b> Jifa Gu , Xijin Tang	<b>81</b>
<b>Exploring Computerized Support for Group Argumentation for Idea Generation</b> Xijin Tang, Yijun Liu	<b>86</b>
<b>Contingent Framework for Supporting Participatory Decision Making</b> Kyoichi Kijima	<b>92</b>
<b>Crude Oil Price Forecasting with TEI@I Methodology</b> Shouyang Wang, Lean Yu, K.K. Lai	<b>98</b>
<b>Modeling Web for Knowledge Integration and Creation</b> Marek Makowski	<b>104</b>
<b>Approaches to Performance Analysis and Optimization of Communication Networks</b> Wuyi Yue	<b>115</b>
<b>Application of Knowledge Management in China's Enterprises</b> Yuanzhang Liu	<b>122</b>
<b>Knowledge Transfer in Supply Chain: Hold Suppliers' Complementary Knowledge</b> Jian Chen , Yan Lin	<b>125</b>
<b>Discussions on the Distance of Information-State Transition</b> Huanchen Wang	<b>134</b>
<b>Mining Scientific Data</b> Tu Bao Ho	<b>137</b>
<b>Solving the Mystery of Rough Sets: Links between Topologies and Rough Sets</b> Milan Vlach	<b>144</b>
<b>Flow Graphs – a New Paradigm for Data Mining and Knowledge Discovery</b> Zdzisław Pawlak	<b>147</b>