

## Optomechatronic Systems III (rb05)

Part of SPIE's International Conference on  
Optomechatronic Systems III  
12-14 November 2002 • Messe Stuttgart International • Stuttgart, Germany

*Cooperating Organizations:* Institute of Control, Automation and System Engineers (ICASE)  
JOEM Japan Optoelectro-Mechanics Association

*Conference Chair:* **Toru Yoshizawa**, Tokyo Univ. of Agriculture and Technology (Japan)

*Cochairs:* **Hyungsuck Cho**, Korea Advanced Institute of Science and Technology (Korea); **George K. Knopf**, Univ. of Western Ontario (Canada); **Rainer Tutsch**, Technische Univ. Braunschweig (Germany)

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Mechatronic technology creates high-precision products, processes and systems by integration of mechanical, electronic and computer systems. It has now evolved to incorporate optics, communication, and image and information technologies, resulting in more synergistic effect. In particular, optical components and information processing technologies are being integrated at an accelerated rate into mechatronic systems, because these optical-based technologies provide components for high-precision, high-functionality, rapid information processing, and smart functions. This optical-based mechatronic technology can be utilized for a variety of applications that require precision sensors and actuators, optical-based process monitoring, robust control devices, intelligent vision systems, and high-density information storage devices. As a result of this evolution, products, processes and systems are becoming smarter, more accurate, and more human-friendly than those of the past. These optomechatronic technologies will continue to play a leading role in the development of intelligent products and systems in the coming years.

This conference is designed to fulfill the need for closer collaboration between researchers, academics, manufacturers, and end users by bringing them together in a single forum to interact, exchange technical knowledge, and discuss their experiences. To achieve this goal the conference will focus on the design and implementation of smart optomechatronic systems. Papers on all aspects of optomechatronic systems are welcome, including, but not limited to the following:

### Optomechatronic Technology

- sensors and actuators with optical/optoelectronic components
- multisensor information fusion
- intelligent/embedded control structures
- process monitoring and control
- optical-based human/machine interface
- optical driving and control for actuators

### Optomechatronic Devices/Systems

- optical elements and components
- micro-/nano-optics
- micro-optical systems
- advanced optical design, fabrication, and testing
- smart products that incorporate optical feedback
- smart systems that utilize biological sensors and transducers
- information storage and display devices/systems
- semiconductor equipments and processes

### Intelligence for Optomechatronic System

- pattern recognition
- neural network and fuzzy logic
- machine learning/cognitive system
- evolutionary computation
- intelligent robots and optoelectronic components

### Applications and Products Using Optomechatronic Systems

- automated measurement and inspection based on optomechatronic principles
- image processing and synthesis
- optical/optoelectronic precision measurement and inspection
- 3D measurement and reconstruction
- robotic/manufacturing applications
- intelligent vision systems for sensing and control
- products created using optomechatronic systems

### Invited sessions

Invited sessions are aimed at providing focused discussion on new and timely research topics, innovative applications, and case studies. Each invited session will consist of four papers, which will be reviewed through the regular reviewing process. Those interested in organizing an invited session should contact the Conference Chair, Professor T. Yoshizawa, Tokyo Univ. of Agriculture and Technology, Japan, [yoshi@cc.tuat.ac.jp](mailto:yoshi@cc.tuat.ac.jp) by 6 May, 2002, and submit a proposal including a minimum of four extended abstracts, and a session title.

**Abstract Due Date: 6 May 2002**

**Manuscript Due Date: 19 August 2002**

*Proceedings of this conference will be published and available at the meeting.*

**THE ABSTRACT AND MANUSCRIPT DUE DATES MUST BE STRICTLY OBSERVED.**

# Submission of Abstracts for Industrial Photonics Stuttgart symposium

Abstract Due Date: **6 May 2002**

Manuscript Due Date: **19 August 2002**

*Proceedings of this conference will be published and available at the meeting.*  
**THE ABSTRACT AND MANUSCRIPT DUE DATES MUST BE STRICTLY OBSERVED.**

**Submissions imply the intent of at least one author to register, attend the symposium, and present the paper (either orally or in poster format).**

**Your abstract must include all of the following:**

1. **SUBMIT TO:** RB05, YOSHIZAWA
2. **SUBMIT EACH ABSTRACT TO ONE CONFERENCE ONLY** Optomechatronic Systems III (rb05)
3. **ABSTRACT TITLE**
4. **AUTHOR LISTING** (principal author first)  
For each author: First (given) name (initials not acceptable), Last (family) name, Affiliation, Mailing address, Telephone, Fax, and Email address.
5. **PRESENTATION**  
Indicate your preference for "Oral Presentation" or "Poster Presentation." Final placement is subject to chairs' discretion.
6. **BRIEF BIOGRAPHY** (principal/presenting author)  
Approximately 50 words.
7. **ABSTRACT TEXT**  
Approximately 500 words.
8. **KEYWORDS**  
List a maximum of five keywords.

## Conditions of Acceptance

- **Authors are expected to secure registration fees and travel and accommodation funding, independent of SPIE, through their sponsoring organizations before submitting abstracts.**
- Only original material should be submitted.
- Commercial papers, descriptions of papers with no research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this symposium.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
- Government and company clearance to present and publish should be final at the time of submittal. Authors are required to warrant to SPIE in advance of publication of the Proceedings that all necessary permissions and clearances have been obtained, and that submitting authors are authorized to transfer copyright of the paper to SPIE.
- Applicants will be notified of acceptance by mail no later than 22 July 2002. Early notification of acceptance will be placed on the SPIE Web site the week of 1 July 2002 at [www.spie.org/info/rb/](http://www.spie.org/info/rb/)

## Paper Review

To ensure a high-quality conference, all abstracts and Proceedings of SPIE manuscripts will be reviewed by the Conference Chair/Editor for technical merit and suitability of content. Conference Chair/Editors may require manuscript revision before approving publication, and reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations. SPIE's decision on whether to publish manuscripts is final.

## Instructions for Submitting Abstracts

**All authors are **STRONGLY ENCOURAGED** to submit their abstracts by the due date using the "submit an abstract" link on the Web at:**

**[www.spie.org/info/rb/](http://www.spie.org/info/rb/)**

**Using this method of submission ensures that your abstract will be immediately accessible to the conference chair for review. Using other methods of submission (listed below) will delay the processing of your abstract.**

- or E-MAIL each abstract separately to: [abstracts@spie.org](mailto:abstracts@spie.org) in ASCII text (not encoded) format. IMPORTANT: to ensure receipt and proper processing of your abstract, the Subject line must include only the following:  
SUBJECT: **RB05, YOSHIZAWA**
- or MAIL your abstract to:  
OPTOMECHATRONICS SYSTEMS III  
SPIE, P.O. Box 10, Bellingham, WA 98227-0010 USA  
Shipping Address: 1000 20th St., Bellingham, WA 98225 USA
- or FAX one copy to SPIE at 360/647-1445 (send each abstract separately).

## Oral or Poster Presentation

Instructions for Oral and Poster presentations will be included in your author kit. All Oral and Poster presentations are included in the *Proceedings of SPIE* and require a manuscript.

## Proceedings of SPIE

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## Publishing Policy

**Manuscript due dates must be strictly observed.** Late manuscripts may not be published in the Proceedings of SPIE, whether the conference volume will be published before or after the meeting. The objective of this policy is to better serve the conference participants as well as the technical community at large, by enabling timely publication of the Proceedings. **Papers not presented at the meeting will not be published in the conference Proceedings**, except in the case of exceptional circumstances at the discretion of SPIE and the Conference Chair/Editors.

## Participant Registration Fee

Authors, coauthors, program committee members, and session chairs are accorded a reduced symposium registration fee. If you are a current **SPIE Member** you will enjoy an additional discount on your symposium registration fee and on educational short courses.