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Hyungsuck Cho
Heikki N. Koivo
Editors

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International Symposium on Optomechatronic Technologies ISOT 2007

In recent years, most engineered products, processes, and systems have been evolving towards higher functionality, flexibility, intelligence, and miniaturization. This trend is stimulated by the ongoing fusion between optical and mechatronic technologies leading not only to enhanced performance but also to the creation of new, innovative functionalities. Because of its synergistic effect, the integration of these engineering fields, labeled optomechatronic technology, is becoming a major driving force to future enabling technologies.

The objective of this symposium is to gather researchers and engineers working in the field of optomechatronics and to provide them with a forum for discussion for exchanging their points of view and experience and sharing their research results through high quality peer reviewed papers.

The symposium consists of five conferences:

- 1) **Optomechatronic Actuators and Manipulation**
- 2) **Optomechatronic Sensors and Instrumentation**
- 3) **Optomechatronic Micro / Nano Devices and Components**
- 4) **Optomechatronic Computer-Vision Systems**
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Introduction

Optomechatronic control systems deal with the control of integrated optical and mechatronic systems to achieve high performance and functionality, such as high precision, rapid information processing, and intelligent functions. These control systems offer significant potential advantages over the conventional control systems in terms of power, signal attenuation, bandwidth, flow of information, electromagnetic interference immunity, and safety. However, control of optomechatronic systems involves serious challenges due to inherent system non-linearities, uncertainties, time-varying properties, and disturbances. Addressing such control problems is vital for future advancement and the advent of new applications of optomechatronic technology. In order to strengthen the science and engineering of optomechatronic control systems it is essential that researchers and engineers communicate and coordinate their work.

The purpose of this conference is to promote research activities in various areas of design and implementation of optomechatronic control systems by providing a forum for the exchange of ideas, presentation of technological achievements, and discussion of future directions.

Sergej Fatikow