

IUMRS-ICAM 2003

8th IUMRS International Conference on Advanced Materials <http://www.mrs-j.org/ICAM2003/index.html>

Yokohama, Japan October 8-13, 2003

Conference Site : Pacifico Yokohama (Yokohama International Conference Center) <http://www.pacifico.co.jp/index-e.htm>

Organized by The Materials Research Society of Japan (MRS-J) <http://www.mrs-j.org>

Symposium A-1

Growth of Well-defined Nanostructures

Call for Papers

Authors wishing to present papers in the symposium are encouraged to submit abstracts

Final decision on presentations will be informed after the review of the abstracts

Abstract Deadline : April 30, 2003

Acceptance Notification : June 20, 2003

Early Registration Deadline : June 30, 2003

Accommodation Deadline : September 30, 2003

Manuscript Deadline (for Proceedings) : October 12, 2003

Scope of the Symposium

For the past forty years, electronic computers have grown more powerful as their basic subunit, the transistor, has shrunk. However, the laws of quantum mechanics and the limitations of fabrication techniques soon will prevent further reduction in the minimum size of today's semiconductor transistors. In order to continue this miniaturization down to the molecular scale, present-day microelectronic device designs must be replaced with new designs that take advantage of the quantum mechanical effects that dominate on such a small scale. Fabrication techniques of nanostructures in semiconductor materials are currently studied very intensively. Well understanding of the mechanism in the growth of nanostructures is necessary to realize the novel quantum effect devices. The purpose of this symposium is to stimulate and foster discussions among leading researchers working on the fabrication technology and materials science of nanostructures.

Topics

Self-organized Formation of Nanostructures in Semiconductor Materials

Fabrication of Nanostructures for Devices

Mechanism of Nanostructure Formation

Materials Science of Nanostructures

Invited Speakers

Prof. Masakazu ICHIKAWA, Univ. of Tokyo, Japan

“Formation of Si and Ge nanostructures on Si substrates using ultrathin SiO₂ technology”

Prof. Yasuharu TAKEDA, Osaka Univ., Japan

“Formation mechanism of nanocatalysts for the well-defined growth of silicon nanowires and nanochains”

Prof. Toshio OGINO, Yokohama National Univ., Japan

“Integrated and interconnected silicon nanostructures”

Prof. Koichi YAMAGUCHI, Univ. of Electro-Communications, Japan

“Self-formation of semiconductor quantum nanostructures - quantum dots, quantum-dot chains and nano-holes -”

Prof. Takashi FUKUI, Hokkaido Univ., Japan

“GaAs single electron transistors and their integrated logic circuits based on selectively grown quantum nanostructures”

Dr. Kiyoshi ASAKAWA, FESTA, Japan

“High-density, high-uniformity and high-spatial-selectivity InAs quantum dots for optical nonlinearity-based nano-photonics”

Prof. Gregory J. SALAMO, Univ. of Arkansas, USA

“High index surfaces - A playing field for nanostructures”

Prof. Richard NOETZEL, Eindhoven Univ Technol., Netherlands

“Self-organized anisotropic strain engineering: A new concept for quantum dot ordering”

Chairpersons

Dr. Nobuyuki KOGUCHI¹⁾ NIMS (KOGUCHI.Nobuyuki@nims.go.jp)

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Prof. Emeritus Mitsuo KAWABE, Tsukuba Univ., NIMS

Prof. Masakazu ICHIKAWA, Univ. of Tokyo, Japan

Prof. Koichi YAMAGUCHI, Univ. of Electro-Communications, Japan