

# **International Symposium on VCSELs and Integrated Photonics - Celebrating the 30<sup>th</sup> Anniversary of VCSEL - December 17-18, 2007**

**Toranomon Pastoral Hotel, Tokyo, Japan (<http://www.pastoral.or.jp/>)**

**Sponsored by Global COE Program "*Photonics-Integrated Core Electronics*"  
& P&I Laboratory, Tokyo Institute of Technology**

A vertical cavity surface emitting laser (VCSEL) was invented in 1977. A lot of unique features have been proven and various applications of VCSELs such as datacom, optical interconnects, and so on are being explored. For celebrating the 30<sup>th</sup> anniversary of VCSEL, International Symposium on VCSELs and Integrated Photonics is organized and sponsored by Global COE "Photonics-Integrated Core Electronics" and P&I Laboratory, Tokyo Institute of Technology. We have invited eminent speakers on VCSELs and photonics from overseas and Japan. The past, present and future prospects on VCSELs and their applications will be discussed. Also, the symposium will highlight emerging technologies for integrated photonics.

## **Memorial Talk:**

Kenichi Iga (Tokyo Institute of Technology, Japan): "VCSEL - A Small and Marvelous Device-"

## **Invited Speakers:**

Markus C.	Amann	(Technical University of Munich, Germany)
Takayoshi	Anan	(NEC, Japan)
Shigehisa	Arai	(Tokyo Institute of Technology, Japan)
Yasuhiko	Arakawa	(Univ. of Tokyo, Japan)
Dieter	Bimberg	(Technical University of Berlin, Germany)
John	Bowers	(UC Santa Barbara, USA)
Connie	Chang-Hasnain	(UC Berkeley, USA)
Kent	Choquette	(Univ. of Illinois, USA)
Larry	Coldren	(UC Santa Barbara, USA)
Dennis	Deppe	(Univ. of Central Florida, USA)
Karl J.	Ebeling	(Univ. of Ulm, Germany)
James	Harris	(Stanford University, USA)
Diana	Huffaker	(UC Los Angeles, USA)
Jack	Jewell	(JDS Uniphase, USA)
Akihiko	Kasukawa	(Furukawa Electric., Japan)
Kohro	Kobayashi	(Tokyo Institute of Technology, Japan)
Fumio	Koyama	(Tokyo Institute of Technology, Japan)
Anders	Larsson	(Chalmers University of Technology, Sweden)
Kevin	Lear	(Colorado State University, USA)
Yong Hee	Lee	(KAIST, Korea)
Tetsuya	Mizumoto	(Tokyo Institute of Technology, Japan)
Takeshi	Nakamura	(Fuji Xerox, Japan)
Shing Chung	Wang	(National Chiao Tung University, Taiwan)
Ming	Wu	(UC Berkeley, USA)

## **Poster Session:**

Poster presentations showing latest results on VCSELs and integrated photonics will be included.

**Advance Registration:** Send your name and affiliation to the symposium organizer, Prof. Fumio Koyama, Tokyo Institute of Technology via email (Email address: <[koyama@pi.titech.ac.jp](mailto:koyama@pi.titech.ac.jp)>).

**Registration Fee:** Free, but pre-registration is requested. Early 300 will be accommodated.

**Advance Program**  
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**December 17th, Monday**

9:45-10:00 Opening session

10:00-11:00 Kenichi Iga (Tokyo Institute of Technology): "VCSEL - a small and marvelous device-"

11:00-12:30 Session A

Jack L. Jewell (JDS Uniphase): "VCSEL development throughout the bubble and crash"

Larry A. Coldren (UC Santa Barbara): "High-speed datacom VCSELs at 1310 and 980 nm"

Karl J. Ebeling (University of Ulm): "VCSEL research at Ulm revisited"

13:30-16:00 Session B

Connie Chang-Hasnain (UC Berkeley): "High-index contrast grating VCSELs"

Yasuhiko Arakawa (University of Tokyo):

"Advances in classical and non-classical quantum dot light sources related to VCSELs"

Dieter Bimberg (Technical University of Berlin):

"Merging VCSELs and nanostructures for future ultrafast data communication"

Dennis G. Deppe (Univ. of Central Florida):

"VCSEL scaling and the impact on speed, efficiency, and light emission"

Yong Hee Lee (KAIST): "2-D photonic crystal lasers - VCSELs in next dimension"

16:20-18:50 Session C

Kent Choquette (University of Illinois): "Pushing the performance of photonic crystal VCSELs"

Shing Chung Wang (National Chiao Tung University): "GaN-based blue VCSELs - progress and challenges"

Akihiko Kasukawa (Furukawa Electric): "Long wavelength GaInNAs(Sb) VCSEL"

Markus C. Amann (Technical University of Munich):

"Buried-tunnel-junction VCSELs for the long wavelength regime"

James S. Harris (Stanford University): "GaInNAsSb long wavelength VCSELs"

18:50-21:00 Reception

**December 18th, Tuesday**

9:00-10:30 Session D

Fumio Koyama (Tokyo Institute of Technology): "New functions of VCSEL-photonic devices"

Takeshi Nakamura (Fuji Xerox):

"Recent activities of Fuji Xerox VCSEL - Light source for laser printer and optical link for cell phone -"

Hyun-Kuk Shin (Optics Corp.): "VCSEL based optical link modules for high resolution display systems"

10:50-12:50 Session E

Anders G. Larsson (Chalmers University of Technology):

"Engineering the optical properties of VCSELs using surface structures"

Kevin L. Lear (Colorado State University): "Oxide optics in VCSELs"

Takayoshi Anan (NEC): "High-speed InGaAs VCSELs for optical interconnections"

Kohroh Kobayashi (Tokyo Institute of Technology):

"VCSELs for high-speed highly parallel optical interconnection"

13:50-16:20 Session F

John E. Bowers (UC Santa Barbara): "Silicon photonics: issues and solutions"

Diana Huffaker (UC Los Angeles): "III-V devices on Si using an IMF growth mode"

Shigehisa Arai (Tokyo Institute of Technology):

"1.5-1.6  $\mu\text{m}$  wavelength low threshold single-mode lasers consisting of strongly index-coupled structures"

Ming Wu (UC Berkeley): "Micro-optics, MEMS, and optofluidics"

Tetsuya Mizumoto (Tokyo Institute of Technology): "Optical isolator for photonic integrated circuit"

16:30-18:00 Poster Session: 40 poster papers on photonics will be presented.