

JSPS Core-to-Core Program
FY2012 Implementation Plan (Project No. : 20003)

Research Theme Electronics and Photonics Convergence by Si Photonics

Duration of Project 2010/4/1-2013-3/31 (36 months)

Core Institution in Japan (Co-Chair) School of Engineering, The University of Tokyo
(Kazumi WADA)

Implementing Organizations

○ **Japan**

Japan	Core Institution	School of Engineering, The University of Tokyo	
	Co-Chair (name and title)	Kazumi WADA · Professor	
	Cooperating Institutions	Kyoto Univ., Yokohama National Univ., The Univ. of Electro-Communications, Tohoku Univ., Okayama Univ., Univ. of Hyogo	Number of Cooperating Institutions
6			

○ **Partner Countries**

	Core Institution	Ghent University	
	Co-Chair (name and title)	Roel BAETS · Professor	
	Cooperating Institutions	University of Trento, University of Surrey, Max Planck Institute of Microstructure Physics, Universität Stuttgart, Vienna, University of Technology, Università di Roma, FOM, Université Paris-Sud	Number of Cooperating Institutions
8			

	Core Institution	Massachusetts Institute of Technology, Microphotonics Center	
	Co-Chair (name and title)	Lionel C. KIMERLING · Professor	
	Cooperating Institutions	Rochester University, Lehigh University, Cornell University, National Research Council Canada Institute of sciences of microstructures, Stanford University, CALTEC, UCLA, McMaster University	Number of Cooperating Institutions
8			

Objectives of Research Exchange (including the five years after the project finishes)

The program establishes a research hub network on silicon photonics among MIT in North America, Ghent University in Europe, and the University of Tokyo in Japan and enhances electronics and photonics convergence on silicon CMOS platform. Through the enhanced hub network on silicon photonics in the world, young researchers should be involved in the silicon photonics research in terms of foundry-assisted prototyping of his/her devices and materials research. This is the other goal of the present program to create their own networks to interact with the researchers in the northern hemisphere.

Results to the present

In the past two years under the present program, we built a world hub in terms of research collaborations through face-to-face and video conferences.

- (1) The first university-initiative on silicon photonic devices and circuits using foundry.
- (2) Sending young Japanese researchers to universities and institutes in the research hubs in North America and Europe.
- (3) International conferences (Univ. of Tokyo, 2007), (MIT, 2009), and (MIT and Gent Univ., 2010), and International schooling (Kyoto, 2011) to exchange information among the three research hubs.

Summary of FY 2012 Exchange Plan

Joint Research

Light emitter integration with waveguides

Seminar

JSPS CORE TO CORE Program 11th Silicon Photonics Seminar

JSPS CORE TO CORE Program 5th International Conference on Silicon Photonics (in Tokyo)

Researcher Exchanges

We plan to encourage young researchers visit partner institutions this summer .

Summer/Winter School

We plan to have the 2nd International Schooling on Si Photonics in Tokyo in Winter, 2013. We will invite lecturers and students from Ghent Univ., MIT and partner institutions. We expect 20-30 Japanese students to join this Winter School.