

JSPS Core-to-Core Program
FY2011 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 University 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 aims to converge the research hub network on silicon photonics among MIT in North America, Ghent University in Europe, and University of Tokyo in Japan to enhance electronics and photonics convergence on silicon CMOS platform for the future. 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 first year of the program and the two-year preprogram, we have built the world hub in terms of research collaborations and conferences face-to-face as well video.

- (1) the first university-initiative on silicon photonic devices and circuits using foundry,
- (2) young researchers exchange to experience outside Japan by staying 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) to exchange information among the three research hub network.

Summary of FY 2011 Exchange Plan

Joint Research

Light emitter integration with waveguides

Seminar

JSPS CORE TO CORE Program 4th International Conference on Silicon Photonics
(in Europe or in U.S.A.)

JSPS CORE TO CORE 8th and 9th SILICON PHOTONICS SEMINAR
(in Tokyo)

Researcher Exchanges

We plan to encourage young researchers to visit among the partner countries and this summer we will send young researchers to Summer school of Silicon Photonics in Europe.

Summer School

We plan to have a Fall school in Kyoto in Fall. We will invite lectures and students from Ghent Univ. and MIT. We expect 20-30 Japanese students to join this fall school .