



Nano Scale Disruptive Silicon-Plasmonic Platform for Chip-to-Chip Interconnection

Final report on NAVOLCHI dissemination and promotion activities

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1	Karlsruher Institut für Technologie	KIT	Germany	M1	M45
2	INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM VZW	IMEC	Belgium	M1	M45
3	TECHNISCHE UNIVERSITEIT EINDHOVEN	TU/e	Netherlands	M1	M45
4	RESEARCH AND EDUCATION LABORATORY IN INFORMATION TECHNOLOGIES	AIT	Greece	M1	M45
5	UNIVERSITAT DE VALENCIA	UVEG	Spain	M1	M45
6	STMICROELECTRONICS SRL	ST	Italy	M1	M45
7	UNIVERSITEIT GENT	UGent	Belgium	M1	M45

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Executive Summary

This document presents the dissemination and promotion activities that NAVOLCHI partners have carried out during the period M01 – M45. Papers, workshops, conferences, and other activities are listed. NAVOLCHI partners have been very active disseminating and promoting the activities and results of the project. The following list summarizes the related activities of the project.

- 39 journals (among others 2 **Nature Photonics** and 1 **cover story** at Optics and Photonics News)
- 77 conference publications disseminating the project have been published by NAVOLCHI partners,
- in addition, a cover article on plasmonic communications has been published in the May 2013 issue of Optics & Photonics News.
- a white paper on the innovation potential of plasmonic interconnects has been published online,
- a NAVOLCHI workshop on plasmonics-based components has been organized at the ICTON 2012 conference at Warwick (UK), attracting more than 50 attendees. Another NAVOLCHI workshop has been organized in ICTON 2013 (June 2013, Cartagena, Spain).
- the project website is up and running with useful information on the project,
- a brochure on NAVOLCHI activities and goals has been issued.
- 1 provisional patent

Change Records

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1. Contents

1.	INTRODUCTION	5
2.	SUMMARY: DISSEMINATION AND PROMOTION ACTIVITIES	5
3.	DISSEMINATION ACTIVITIES	6
3.1.	Journals (M19-M45).....	6
3.2.	Journals (M1-M18).....	8
3.3.	Conferences (M19-M45)	9
3.4.	Conferences (M1-M18)	13
3.5.	Ph.D. thesis	16
4.1.	Master thesis	16
4.2.	Patents.....	16

1. Introduction

This document is the final report on dissemination and promotion activities for project NAVOLCHI. The dissemination activities carried out by NAVOLCHI partners in the period M01-M45 (November 2011 – July 2015) of the project follows and constitutes the centerpiece of the report.

Dissemination and promotion activities constitute Task 7.1 of NAVOLCHI, spanning the whole duration of the project (M01 – M45).

2. Summary: Dissemination and Promotion Activities

Dissemination of ideas and results is of high importance in the NAVOLCHI project. The partners of NAVOLCHI are top research organizations with proven track records in their field and are very active in disseminating research results in a worldwide range to scientists, industry, and the public.

Dissemination and promotion activities in NAVOLCHI concern informing professionals, students, and the public of NAVOLCHI activities, results, and the potential of the technology. The above objective are met through:

- Scientific journal, magazine and conference publications.
- White papers on NAVOLCHI technology, posted online.
- The NAVOLCHI website, operating since the start of the project.
- Organization of NAVOLCHI workshops.
- Issuing press releases and brochures.
- Organization of seminars.

NAVOLCHI partners have been very active disseminating and promoting the activities and results of the project. The following list summarizes the related activities of the project.

- 39 journals (among others 2 **Nature Photonics** and 1 **cover story** at Optics and Photonics News)
- 77 conference publications disseminating the project have been published by NAVOLCHI partners,
- in addition, a cover article on plasmonic communications has been published in the May 2013 issue of Optics & Photonics News.
- a white paper on the innovation potential of plasmonic interconnects has been published online,
- a NAVOLCHI workshop on plasmonics-based components has been organized at the ICTON 2012 conference at Warwick (UK), attracting more than 50 attendees. Another NAVOLCHI workshop has been organized in ICTON 2013 (June 2013, Cartagena, Spain).
- communication has been established with plasmonics-related EU-funded project PLATON (<http://www.ict-platon.eu>),
- the project website is up and running with useful information on the project,
- a brochure on NAVOLCHI activities and goals has been issued.

3. Dissemination Activities

3.1. Journals (M19-M45)

1. C. Haffner, W. Heni, Y. Fedoryshyn, J. Niegemann, A. Melikyan, D. L. Elder, B. Baeuerle, Y. Salamin, A. Josten, U. Koch, C. Hoessbacher, F. Ducry, L. Juchli, A. Emboras, D. Hillerkuss, M. Kohl, L. R. Dalton, C. Hafner & J. Leuthold, All-plasmonic Mach–Zehnder modulator enabling optical high-speed communication at the microscale, **Nature Photonics** 9, 525–528 (2015)
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- waveguide consisting of a QD-polymer heterostructure, *Optics Letters* 39, 4692-4695 (2014).
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Plasmonic-organic hybrid (POH) modulators for OOK and BPSK signaling at 40 Gbit/s
Conf. on Lasers and Electro-Optics (CLEO'15), San Jose (CA), USA, May 10–15, paper SM11.1. *Optical Society of America (OSA)* (2015)
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From silicon-organic hybrid to plasmonic modulation
Optical Communication (ECOC), 2014 European Conference on, 1-3, Cannes, France, September 21–25 (2014), (invited)
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Micro and Nano Engineering (MNE'2014), Lausanne, Switzerland, paper 8274 (2014)
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High-speed Plasmonic Modulators
Integrated Photonics Research, Silicon and Nanophotonics (IPR'14), San Diego, California United States, July 13-17, paper IT2A.6 *Optical Society of America (OSA)* (2014)
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3.5. Ph.D. thesis

1. Henry Gordillo Millán, Defended 15th July 2013, “Guías ópticas activas de polímero con puntos cuánticos coloidales” (Active optical waveguides based on polymers with colloidal quantum dots). Co-supervisors: Drs. Juan Martínez Pastor and Isaac Suárez.
2. Alberto Maulu, He is developing his PhD research work on “Photodector devices based on PbS quantum dots” since 15th June 2013.
3. Pieter Geiregat, “Colloidal Quantum Dots for Integrated Photonics: From Optical Gain to Ultrafast Modulation, 2/2015” (PhD Thesis)
4. Bram De Geyter, “Colloidal Quantum Dots as Light Emitters for Silicon Photonics”, 11/2012

4.1. Master thesis

1. Víctor Latorre Garrido, December 2012: “Propiedades Eléctricas y Ópticas del PMMA 3T-Au” (Electrical and optical properties of PMMA 3T-Au).
2. Juan Navarro Arenas, he is developing a Master research work related to “Photoconductor devices based on PbS and AgSe₂ quantum dots” along 2015.

4.2. Patents

V. M. Dolores-Calzadilla, A. Higuera Rodriguez, D. Heiss, (2014). “Metal grating coupler for membrane-based integrated photonics”, USA Provisional Patent Application filed, application number: 61/979, 2014.

