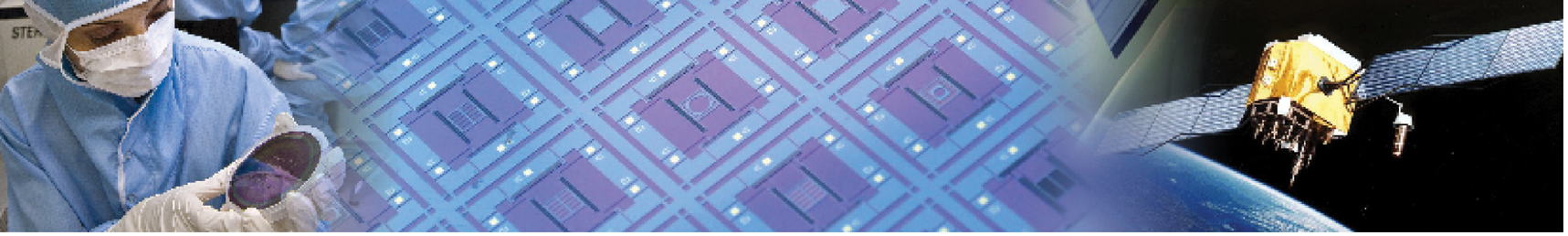


ABOUT THE ORGANISERS

Laboratory of excellence ACTION

Smart systems embedded into matter

ACTION is a long-term scientific program (2012-2019) managed by FEMTO-ST and two other French research labs (ICB, LNIO) which aims at becoming an international reference in the field of the design and the demonstration of integrated smart systems (integrated whispering gallery mode resonators for coherent WDM optical communication networks, neuromorphic photonic processor for pattern recognition or prognostic health management of fuel cells...).
www.labex-action.fr/en

FEMTO-ST institute

Engineering, information technology and communication

Founded in 2004, the FEMTO-ST Institute is a joint research unit affiliated with the CNRS, the University of Franche-Comté (UFC), the National Engineering Institute in Mechanics and Microtechnologies (ENSMM) and the University of Technology in Belfort Montbéliard (UTBM). Its objective is to master micro and nanotechnologies, to develop new devices and systems, to optimize their performance, to provide them with new functions and make them “smart”.
www.femto-st.fr

FEMTO Engineering

FEMTO Engineering is a center for technological development which undertakes development projects in 6 broad technological fields: Energy, Optics, Time-Frequency, Micro-technologies for cleanrooms, Biomedical and Mechanics.
http://femto-engineering.fr

Partners:

OUR STRONG COMMITMENT IN THE INTERNATIONAL YEAR OF LIGHT 2015

United Nations Educational, Scientific and Cultural Organization · In support of International Year of Light 2015

On 20 December 2013, the UN General Assembly 68th Session proclaimed 2015 as the International Year of Light and Light-based Technologies (IYL 2015).

John DUDLEY, researcher at FEMTO-ST and member of the Labex ACTION, is Chair of IYL 2015 steering committee.
www.light2015.org

COMMITTEE LIST

Co-chairs:

- Christophe Gorecki, FEMTO-ST, manager of the technology platform “MOEMS integration” at ACTPHAST, SPIE board member
- Hervé Maillotte, Director of the Optics department of FEMTO-ST

Local committee:

- Labex ACTION: Ausrine Bartasyte (chair of excellence), Claudia Laou-Huen, Sandrine Chatrenet
- FEMTO-ST: Maria Bernal, Nadège Courjal, Mathieu Chauvet
- FEMTO Engineering: Florent Bassignot, Tatiana Locatelli

REGISTRATION

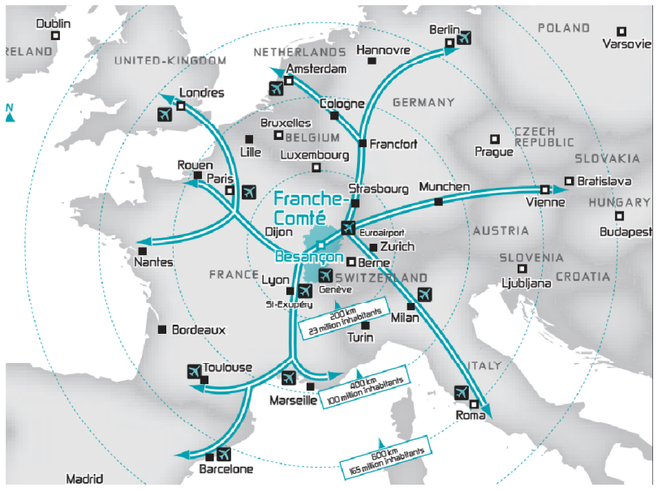
Participation to the workshop is free of charge (except for exhibitors and the pre-conference dinner) but registration is mandatory.
Registration available on: **www.micronanophotonics.fr**
Deadlines > Workshop: 27.11.2015 - Exhibition: 13.11.2015

VENUE

Besançon, French capital of microtechnics

The workshop will take place at the FEMTO-ST Institute, Besançon (France), which hosts several leading edge technological platforms, including the MIMENTO Technology Center (part of the French RENATECH network).

Institut FEMTO-ST
15 B avenue des Montboucons 25030 Besançon - France



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FOR FURTHER DETAILS PLEASE CONTACT:

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MNP 2015
Micro Nano Photonics

Towards multifunctional photonic micro devices and sub-systems: latest advances and future trends

International workshop
2-3 December 2015 - Besançon, France

www.micronanophotonics.com

MNP 2015

Micro Nano Photonics

International workshop - Besançon FR

STATEMENT

Photonic and optoelectronic integration technology is playing a more and more important role for the cost- and energy-efficient deployment of modern ICT systems and biomedical devices. While large-scale electronic integration is already a mature tool for the development of multifunctional devices and systems on a chip level, photonic integration is still in its period of adolescence. Access to high performance by substituting critical electronic functions by photonic functions is therefore still hindered when it comes to complex smart systems.

Functional and technological convergence of key enabling technologies such as active materials, microelectronics and photonics will be the only way to exploit synergies of these worlds: **intelligence, flexibility and high performance**. By incorporating all these assets in a unified technology toolbox, the vast potential of future smart photonics can be efficiently unlocked.

Demands for greater bandwidths have driven the telecom and datacom research and development communities to realize complex optoelectronic integrated circuits such as transceivers, modulators, switching systems, low chip optical sources, and multichannel optical distribution systems. The integration of micro-lasers is becoming a reality in the communications arena. Other emerging fields include optical computing, medical diagnosis and chemical/ biological sensing. Optical alignment between miniature devices, as well as interconnection minimization and propagation losses, are critical issues and require careful consideration.

In order to meet all these challenges, the Laboratory of Excellence ACTION, FEMTO-ST Institute and Femto Engineering would like to invite you to join a workshop on the **latest advances of miniature photonic components and microsystems**. The application of these systems close-to-production is of general interest.

2 DECEMBER 2015: PRE-WORKSHOP DINNER

With a special intervention of:

Philippe BREGI
President of the French National Optics-Photonics Committee (CNOP)
President of the Opticsvalley Association
CEO, Egide Group

John DUDLEY
Chairman of the IYL 2015 Steering Committee
Researcher at FEMTO-ST

3 DECEMBER 2015: WORKSHOP AND VISITS

Towards multifunctional photonic micro devices and sub-systems: latest advances and future trends

09:00 Welcome & introduction

09:15 Next generation $LiNbO_3$ devices for 100Gbit/s and beyond
Dr. Roberto LONGONE, Oclaro (IT)

09:35 Perspectives in Advanced photonics
Daniel DOLFI, Thales R&T (FR)

09:55 Hybrid material platforms for photonic applications
Dr Sakellaris MAILIS, Univ. of Southampton (UK)

10:15 2-minutes pitches for each MNP2015 Exhibitor
10:20 Coffee break and Exhibition

10:40 «Race3» project for micro photonic applications
Florent BASSIGNOT, FEMTO Engineering (FR)

10:50 Potential applications of $LiNbO_3$ thin layers
Ausrine BARTASYTE, chair of excellence Labex ACTION (FR)

11:05 Heterostructures combining functional oxides and semi-conductors for integrated photonics : SITOGA european project
Guillaume SAINT-GIRONS, Lyon Institute of Nanotechnology (FR)

11:25 Guided tours
Option #1: Visit of the company **Photline- iXblue** / Option #2: **Lab tour**

12:30 Lunch break - Table tops and «Light» exhibition

14:00 Developments in Photonics for Space Applications at CNES
Thomas LEVEQUE, National Center for Space Study (FR)

14:20 Recent achievements in micro- and nanodomain engineering in lithium niobate
Prof. Vladimir SHUR, Labfer Ltd (RU)

14:40 Integrated devices for reconfigurable networks and quantum technologies
Prof. Dr. Valerio PRUNERI, The Institute of Photonic Sciences (ES)

15:00 TriPleX: the versatile Si3N4 based waveguide platform
Arne LEINSE, LioniX (NL)

15:20 Coffee break and Exhibition

15:45 MEMS components for photonics
Christophe GORECKI, FEMTO-ST & member of the EU project ACTPHAST

16:05 Advanced micro-optics systems
Markus ROSSI - HEPTAGON (CH)

16:35 Panel discussion moderated by **Regis Hamelin, BluMorpho**
17:10 Closing speech

17:15 FEMTO-ST Lab tour (3 possible options among 4)
- «Lithium niobate»: ridge waveguides, photonic crystals, components for frequency doubling
- MOEMS and micro optics
- Femtosecond Laser Micromachining
- MIMENTO cleanroom facilities

18:15 End

MAIN TOPICS

The explored topics will include new developments in:

- Technologies and hybridization of active materials for photonics (piezoelectric, ferroelectric, electro optic such as lithium niobate)
- Multifunctional and miniaturized photonic devices such as electric field sensors, frequency converters or light modulators..
- Integration, interconnection, fabrication, assembly, packaging, characterization and roadmap of compound semiconductor photonic and optoelectronic devices
- Integration of different photonic and optoelectronic structure types (planar, free space, photonic bandgap devices, plasmonic devices, etc.)
- Micromachined micro optical components using passive materials (silicon, glass)
- Components, modules, subsystems and systems.

TARGETED APPLICATIONS

Sensing, telecom, security, defense and medical applications.

TECHNICAL PROGRAM

This workshop which is addressed to the private industry, technology platforms and government laboratories will feature :

- Invited presentations from renown experts,
- A panel discussion on the future of multifunctional micro photonics,
- A visit of a local company (Photline- iXblue),
- Several visits of FEMTO-ST and its technological facilities.

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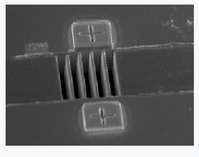
femto-st SCIENCES & TECHNOLOGIES

Active photonic devices for embedded systems (phones, drones, watches..)

FEMTO-ST has been developping an easy-to-implement technology to mass produce miniaturized (<2mm) and low power electro-photonic devices, based on confined optical waveguides with propagation losses lower than 1dB/cm.



Electro-optic modulator with an integrated Fabry-Perot cavity, inscribed in a 4 µm-thick $LiNbO^3$ membrane

(SEM picture by FEMTO-ST)