

# Student poster competition

EFTF

2014

# Student Poster Finalists awards



## 21 abstracts were selected as student poster finalists

Selection made by the Scientific Committee (among 46 abstracts submitted)

### Jury for the finalists

Emmanuel Defay, Marc Faucher, Ashwin Seshia	Group 1
Fabrice Sthal, Jean Pierre Aubry, David Howe	Group 2
Kurt Gibble, Qinghua Wang, Stefan Weyers	Group 3
Paul Muralt, Leo Reindl, Victor Plessky	Group 4
Gesine Grosche, Jerome Delporte, Per Olof Hedekvist	Group 5
Davide Calonico, Helen Margolis, Roman Ciuryło	Group 6

### Evaluation criteria:

- (1) clarity of student's presentation of the poster
- (2) depth of student's knowledge
- (3) degree of student's contribution to the project
- (4) relevancy of the work in the field

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# Finalists



## Group 1 Materials, Resonators, & Resonator Circuits

### 7164 Quartz-Based Vibrating MEMS on Structured Silicon Using Wafer Bonding Technology

Sebastien Grousset, CEA-Leti; Rachid Taïbi, Office National d'Etudes et Recherches Aérospatiales; Lamine Benissa, CEA-Leti; Emmanuel Augendre, CEA-Leti; Thomas Signamarcheix, CEA-Leti; Olivier Le Traon, Office National d'Etudes et Recherches Aérospatiales; Sylvain Ballandras, freq|n|sys SAS

### 7176 Assessment of the Acoustic Shear Velocity in SiO<sub>2</sub> and Mo for Acoustic Reflectors

Mario DeMiguel-Ramos, Universidad Politécnica de Madrid; T. Mirea, Universidad Politécnica de Madrid; J. Olivares, Universidad Politécnica de Madrid; M. Clement, Universidad Politécnica de Madrid; J. Sangrador, Universidad Politécnica de Madrid; E. Iborra, Universidad Politécnica de Madrid

### 7276 Effects of a Plasma Etching Process on a Longitudinally Coupled Resonator Filter

Loïc Braun, AR Electronique SAS; E. Courjon, freq|n|sys SAS; O. Franquet, AR Electronique SAS; W. Daniau, FEMTO-ST Institute; T. Baron, FEMTO-ST Institute; S. Ballandras, freq|n|sys SAS

### 7284 Active Electronic Cancellation of Nonlinearity in a High-Q Longitudinal-Mode Silicon Resonator by Current Biasing

Haoshen Zhu, City University of Hong Kong; Cheng Tu, City University of Hong Kong; Libor Rufer, TIMA Laboratory; Joshua Lee, City University of Hong Kong

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# Winner # 1



## Group 1

### Materials, Resonators, & Resonator Circuits

**7284 Active Electronic Cancellation of Nonlinearity in a High-Q Longitudinal-Mode Silicon Resonator by Current Biasing**

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# Finalists



## Groups 2 & 4 Oscillators, Synthesizers, Noise, & Circuit Techniques Sensors & Transducers

### 7230 Photodiode Nonlinear Modeling and its Impact on Optical Links Phase Noise

Zeina Abdallah, LAAS-CNRS / Centre National d'Etudes Spatiales; A. Rumeau, LAAS-CNRS; J. Maxin, LAAS-CNRS /

Thales Research and Technology; A. Fernandez, LAAS-CNRS; G. Pillet, Thales Research and Technology; L. Morvan,

Thales Research and Technology; O. Llopis, LAAS-CNRS; G. Cibiel, Centre National d'Etudes Spatiales

### 7301 Compact Low Phase Noise 3.8 GHz Oscillator

Pratik D. Deshpande, University of York; Jeremy Everard, University of York

### 7293 Electromagnetic Induction Readout Silicon-on-Insulator MEMS Resonant Magnetometer

Weiguan Zhang, City University of Hong Kong; Joshua E.-Y. Lee, City University of Hong Kong

### 7307 Studying Particulate Adsorption by Drying Droplets on a Microfabricated Electro-Acoustic Resonator

Abhinav Prasad, University of Cambridge; Arthur T. Zielinski, University of Cambridge; Markus Kalberer, University of Cambridge; Roderic L. Jones, University of Cambridge; Ashwin A. Seshia, University of Cambridge

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# Winner # 2



## Groups 2 & 4

### Oscillators, Synthesizers, Noise, & Circuit Techniques Sensors & Transducers

**7301 Compact Low Phase Noise 3.8 GHz Oscillator**

Pratik D. Deshpande, University of York; Jeremy Everard, University of York

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# Finalists



## Group 3

### Microwave Frequency Standards



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#### 7069 High-Purity Microwave Signal from a Dual-Frequency Semiconductor Laser for CPT Atomic Clocks

Paul Dumont, Laboratoire Charles Fabry, Institut d'Optique; J.-M. Danet, Observatoire de Paris; F.A. Camargo, Laboratoire Charles Fabry, Institut d'Optique; D. Holleville, Observatoire de Paris; S. Guerandel, Observatoire de Paris; G. Baili, Thales Research and Technology; L. Morvan, Thales Research and Technology; G. Pillet, Thales Research and Technology; D. Dolfi, Thales Research and Technology; I. Gozhyk, Laboratoire Charles Fabry, Institut d'Optique / Laboratoire de Photoniques et de Nanostructures; G. Beaudoin, Laboratoire de Photoniques et de Nanostructures; I. Sagnes, Laboratoire de Photoniques et de Nanostructures; P. Georges, Laboratoire Charles Fabry, Institut d'Optique; G. Lucas-Leclin, Laboratoire Charles Fabry, Institut d'Optique

#### 7196 Experimental and Numerical Study of the Microwave Field Distribution in a Compact Magnetron-Type Microwave Cavity

Anton Ivanov, École Polytechnique Fédérale de Lausanne; Thejesh Bandi, Université de Neuchâtel; Guan- Xiang Du, Universität Basel; Andrew Horsley, Universität Basel; Christoph Affolderbach, Université de Neuchâtel; Anja K. Skrivervik, EPFL; Philipp Treutlein, Universität Basel; Gaetano Milet, Université de Neuchâtel

#### 7212 Mitigation of Frequency Shifts in a Cold-Atom Coherent Population Trapping Clock

Eric Blanshan, National Institute of Standards and Technology; F.-X. Esnault, National Institute of Standards and Technology; J. Kitching, National Institute of Standards and Technology; E.A. Donley, NIST

#### 7242 Imaging Rb-Wall Interactions and Microwave Fields in Vapor Cells

Andrew Horsley, Universität Basel; Guan-Xiang Du, Universität Basel; Matthieu Pellaton, Université de Neuchâtel; Christoph Affolderbach, Université de Neuchâtel; Gaetano Milet, Université de Neuchâtel; Philipp Treutlein, Universität Basel

#### 7034 Miniature Optical Fiber Cavity for a Trapped Atom Clock

Ramon Szmuk, Observatoire de Paris; Konstantin Ott, Observatoire de Paris / École Normale Supérieure; Ralf Kohlhaas, Observatoire de Paris;  
Jakob Reichel, École Normale Supérieure; Peter Rosenbusch, Observatoire de Paris

# Winner # 3



## Group 3

### Microwave Frequency Standards

7242 Imaging Rb-Wall Interactions and Microwave Fields in Vapor Cells

Andrew Horsley, Universität Basel; Guan-Xiang Du, Universität Basel;  
Matthieu Pellaton, Université de  
Neuchâtel; Christoph Affolderbach, Université de Neuchâtel; Gaetano Miletì,  
Université de Neuchâtel;  
Philipp Treutlein, Universität Basel

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# Finalists



## Group 5

### Timekeeping, T&F Transfer, Telecom and GNSS applications

**7150 Time Transfer Over Delay-Stabilized Fibre Links Using an Optical Pulse Train**

Maurice Lessing, National Physical Laboratory / University of St. Andrews; Giuseppe Marra, National Physical Laboratory

**7201 A Detection Algorithm of Atomic Clock Frequency Jumps with the Prediction Wiener Filter**

Xinming Huang, National University of Defense Technology

**7203 In-Line Extraction of an Ultra-Stable Frequency Signal Over an Optical Fiber Link**

Anthony Bercy, Université Paris 13 / Observatoire de Paris; S. Guellati-Khelifa, Université Pierre et Marie Curie; F. Stefani, Université Paris 13 / Observatoire de Paris; G. Santarelli, Université de Bordeaux 1; C. Chardonnet, Université Paris

13; P.-E. Pottie, Observatoire de Paris; O. Lopez, Université Paris 13; A. Amy-Klein, Université Paris 13

**7288 A Method of Satellite Autonomous on-Board Clock Monitoring Using High-Stability Crystal Oscillator**

Gangqiang Guan, National University of Defense Technology

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# Winner # 4



## Group 5

### Timekeeping, T&F Transfer, Telecom and GNSS applications

**7203 In-Line Extraction of an Ultra-Stable Frequency Signal Over an Optical Fiber Link**

Anthony Bercy, Université Paris 13 / Observatoire de Paris; S. Guellati-Khelifa, Université Pierre et Marie Curie; F. Stefani, Université Paris 13 / Observatoire de Paris; G. Santarelli, Université de Bordeaux 1; C. Chardonnet, Université Paris 13; P.-E. Pottie, Observatoire de Paris; O. Lopez, Université Paris 13; A. Amy-Klein, Université Paris 13

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# Finalists



## Group 6 Optical Frequency Standards and Applications

### 7052 On the Prospects of Building Optical Atomic Clocks Using Er I or Er III

Alexander Kozlov, University of New South Wales; Vladimir Dzuba, University of New South Wales;  
Victor Flambaum, University of New South Wales

### 7112 Laser Stabilization System for Space Applications Based on Hydroxide-Catalysis Bonding

Yingxin Luo, Huazhong University of Science and Technology; Hongyin Li, Huazhong University of Science and Technology; Huzhong Duan, Huazhong University of Science and Technology; Hsien-Chi Yeh, Huazhong University of Science and Technology

### 7165 An Ultra-Low Frequency Noise Laser Based on a 48 cm Long ULE Cavity for a Sr Lattice Clock

Sebastian Häfner, Physikalisch-Technische Bundesanstalt; S. Vogt, Physikalisch-Technische Bundesanstalt; A. Al- Masoudi, Physikalisch-Technische Bundesanstalt; St. Falke, Physikalisch-Technische Bundesanstalt; C. Grebing, Physikalisch-Technische Bundesanstalt; M. Merimaa, Centre for Metrology and Accreditation; Th. Legero, Physikalisch-Technische Bundesanstalt; Ch. Lisdat, Physikalisch-Technische Bundesanstalt; Uwe Sterr, Physikalisch-Technische Bundesanstalt

### 7179 Thin Disk Lasers Enable High-Power Frequency Combs

Florian Emaury, ETH Zurich; Alexander Klenner, ETH Zurich; Andreas Diebold, ETH Zurich; Cinia Schriber, ETH Zurich; Clara J. Saraceno, ETH Zurich / Université de Neuchâtel; Stéphane Schilt, Université de Neuchâtel;  
Ursula Keller, ETH Zurich; Thomas Südmeier, Université de Neuchâtel

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# Winner # 5



## Group 6

### Optical Frequency Standards and Applications

#### 7179 Thin Disk Lasers Enable High-Power Frequency Combs

Florian Emaury, ETH Zurich; Alexander Klenner, ETH Zurich; Andreas Diebold, ETH Zurich; Cinia Schriber, ETH Zurich; Clara J. Saraceno, ETH Zurich / Université de Neuchâtel; Stéphane Schilt, Université de Neuchâtel; Ursula Keller, ETH Zurich; Thomas Südmeier, Université de Neuchâtel

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# Winner # 6



## Best second

### Groups 2 & 4

### Oscillators, Synthesizers, Noise, & Circuit Techniques Sensors & Transducers

**7293 Electromagnetic Induction Readout Silicon-on-Insulator MEMS Resonant Magnetometer**

Weiguan Zhang, City University of Hong Kong; Joshua E.-Y. Lee, City University of Hong Kong

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