JOB OFFER: PH.D POSITION IN NONLINEAR PHOTONICS
FEMTO-ST INSTITUTE DEPARTMENT OF OPTICS, UNIVERSITY OF FRANCHE-COMTE, BESANCON, FRANCE

Title : Fabrication of silica microwire for laser applications and optical sensor

The nonlinear optics group of the FEMTO-ST research institute at the University of Franche-Comté currently has a vacancy for a 3-years Ph.D position working in the development of optical microfibers in view of potential applications to lasers and optical sensors based on Brillouin scattering and related opto-acoustic interactions. This project aims to investigate the remarkable opto-acoustic interactions in these tiny optical waveguides to create novel optical processing techniques, compact narrow-linewidth lasers or ultra-sensitive optical sensors and to achieve state-of-the-art characteristics.
Recently, we demonstrate the generation of a new class of surface acoustic waves in subwavelength-diameter optical fiber at frequency around 6 GHz owing to the strong coupling between sound and light at interface between the optical microwire and the surrounding air [1]. A large portion of this evanescent field enables the diffusion of light by surface acoustic wave.

The Ph.D Student will design and fabricate optical fibre microwires and explore in particular the physics of Brillouin scattering driven by surface acoustic waves in these microfibers and new ways to control and exploit them [1,2].

The candidate must have a Master degree in Photonics, experience in experimental optics and optical physics, nonlinear optics and laser physics, experience with numerical simulations and theoretical modelling.

The position is full-time fixed for three years and should start from September 2015 and no later than December 2015. The remuneration is around 1650€/month. It is subject to social charges and taxes (approx. 17%).

Interested candidates should send an enquiry, a CV including a letter of motivation, score sheet, and letter of internship supervisor, from now on and no later than july 15, 2015, to Kien Phan Huy kphanhuy@univ-fcomte.fr **Jean-Charles Beugnot** at jean-charles.beugnot@femto-st.fr **or Thibaut Sylvestre** at thibaut.sylvestre@univ-fcomte.fr

Complementary information on the research project can be found with the following references:

1. J-C Beugnot, S. Lebrun, G. Pauliat, H. Maillotte, V. Laude, and T. Sylvestre, "Brillouin light scattering from surface acoustic waves in a sub-wavelength diameter optical fibre," Nature Communications 5, Number 5242, 2014.
Press releases: Optics.org ; Science daily; CNRS
2. J-C Beugnot, Raja Ahmad, Martin Rochette, Vincent Laude, Hervé Maillotte, and Thibaut Sylvestre, "Reduction and control of stimulated Brillouin scattering in polymer-coated chalcogenide optical microwires," Optics Letters 39 (3), 482-485 (2014).