

Post doc in photonic bandgap fiber / glass surface roughness characterization - Laboratoire PMMH - CDD 6 mois

<https://www.dev.spip.espci.fr/fr/espci-paris-psl/emploi/archives/2014/post-doc-in-photonic-bandgap-fiber-glass-surface>

Laboratoire d'accueil :

Laboratoire de Physique et Mécanique des Milieux Hétérogènes - ESPCI ParisTech 10 rue Vauquelin 75005 PARIS.

Sujet du postdoc :

The Mode-Gap European project targets the 100 fold enhancement of the overall capacity of broadband core networks. MODE-GAP will develop multi-mode, photonic band gap, long haul transmission, fibres and associated enabling technologies. These fibres offer the potential of order of magnitude capacity increases through the use of multiple-input multiple-output (MIMO) operation of the multi-mode fibre capacity and further order of magnitude capacity increases through the ultra low loss and ultra-low nonlinearity offered by multi-mode photonic bandgap fibre. Within this project, we investigate the loss mechanisms due to residual surface roughness of the inner walls of the fibers, which are believed to be ultimately limited by the frozen capillary waves formed during the drawing of the fibers. To characterize and quantify these losses, high sensitivity optical characterization will have to be collaterated to AFM measurements. For the quantitative characterization of such low losses, measurements will have to be pushed to their limits.

Compétences requises :

We are looking for a post doctoral researcher with a good background in instrumental optics and nanoscience. Prior knowledge of AFM, optical microscopy and micro-fluidics techniques will be appreciated. The successful candidate will develop and use measurement systems in close cooperation with European industrial partners, in particular the Optoelectronics Research Centre (ORC) based at the University of Southampton. References Phan-Huy et al. J. Lightwave Tech., 27, p 1597 (2009) T. Sarlat et al, Euro. Phys. J. B 54, p 121 (2006). P.J. Roberts et al, Opt. Express 13, p 236 (2005)

Début :

12 décembre 2014

Durée :

The position is offered for a duration of 6 months.

Contact : damien.vandembroucq@espci.fr, ModeGap : www.modegap.eu Candidatures (lettre de motivation et CV) à transmettre par courrier électronique à recrutement@espci.fr

Accès

Métro ligne 7 (Place Monge/Censier Daubenton) RER B (Luxembourg) Bus 21, 27 & 47 3 stations Vélib proches