Laboratoire PMMH
CNRS/ESPCI/Paris 6/Paris 7

FRANCE

Post doc in photonic bandgap fiber / glass surface roughness characterization

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 collerated to AFM measurements. For the quantitative characterization of such low losses, measurements will have to be pushed to their limits.

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 academic and industrial partners, in particular the Optoelectronics Research Centre (ORC) based at the University of Southampton.

The position is offered for a duration of 12 months.
The salary will be negociated according to CNRS salary rules.

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)

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