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## **Post-doctoral position**

We regularly welcome post-doctoral researchers. We are currently seeking for a post-doc to work on the research topic described hereafter. If you are interested in this position, please contact Gilles Pauliat at : gilles.pauliat@iota.u-psud.fr.

### **Holographic data storage in micro-structured disk**

We are involved in a new research programme on holographic data storage. In this project, whose acronym is "PolyTS", we are developing a new principle, first exposed in : "Optical data storage in microfibers" A. Labeyrie et al. Opt. Lett. 23, 301, 1998. Ultimately, this holographic storage system will consist of a holographic disk. This disk will be made of a photopolymer sandwiched between two polycarbonate plates. In a first step, using structured light, we will induce a microfiber array in this structure, with typically a fiber spacing of about 1  $\mu\text{m}$  and a fiber length of about 1 mm. After this step, the photopolymer is optically inactive. To record the holograms, a bistable compound will be dispersed inside the monomer, before photopolymerisation. Bits of data will be recorded in each fiber by using two counter-propagating beams. Using wavelength multiplexing (one wavelength for each bit inside the fiber) and taking benefit of the Bragg wavelength selectivity, hundreds of bits could be stored in each fiber, leading to storage capacities of the order of a TeraByte for a 12 cm disk and for a 1mm active layer.

The fellow will work in the Laboratoire Charles Fabry within the research team "Matériaux non linéaires et applications, MANOLIA" and in strong collaboration with other academic and industrial partners.

The fellow will be involved in the material characterization and optimization as well as the conception of the holographic demonstrator.