



Position (PhD Thesis, Post-doc, invited researcher position,...) : **Post-Doc**

Expected starting date period: **Autumn 2007**

Duration: **1 year**

Deadline of this proposal: **end of 2007**

Title

Summary of research/technical work :

LAAS investigates the possibility of using active transmissive optics for active functions. Beyond the current passive systems introducing a static correction defined in the construction and by the choice of materials, it is a question of approaching the active systems allowing a modification in-situ of the optical correction. Within the framework of the present study, the use of optically isotropic materials is privileged. That has several advantages like the optical uniformity, the absence of effects of polarization and a greater simplicity of manufacture. Actuation will be considered preferentially by electric field without neglecting the other possibilities. The components consist of a network of microcavities surrender on the two sides by two transparent layers supporting of the same electrodes. They transparent and continuous on all surfaces. The application of a uniform electric field through the active layer of the component allows a change of the optical index of the medium. The continuity of the electrodes makes it possible to avoid the phenomenon of diffraction introduced by the pixellisation of the control electrodes while simplifying drastically the manufacture of the components. Work will consist in evaluating the impact of these choices on the optical characteristics of the components according to the nature of materials and to determine the best candidates. The validation will be done by demonstrators profiting from the technological experiment acquired by the LAAS in the realization of such components. Through this thesis, the successful candidate will be expected to obtain an expertise in the areas of nano-fabrication, liquid crystals, optical engineering and electronic addressing

Required knowledge of candidate:

Good general knowledge on physics is mandatory
Specific knowledge on optic will be appreciated

Location and other practical information:

At LAAS/CNRS in Toulouse (France)

All information on location, description of lab and other practical information available at <http://www.laas.fr>

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