

Post-doctoral position: 3D scanning wide field non-contact specular microscope

Job description

This project aims at developing a new type of corneal endothelial cells observation by specular microscopy, for the ophthalmologic community. It is a partnership between the Ecole des Mines and the Medical University of Saint-Etienne, France.

Duration: 12 months, extensible to 18 months

Beginning : sept, 1st, 2010

Location : CIS – Ecole des Mines, 158 Cours Fauriel, 42023 Saint-Etienne cedex 2, FRANCE

Application deadline: open until filled

Salary: about 2000 €/month

Project director:

- **Pr Jean-Charles PINOLI**, Centre Ingénierie Santé (CIS), laboratoire LPMG (UMR CNRS 5148), ENSMSE

Project leaders:

- **Dr Yann GAVET**, Centre Ingénierie Santé (CIS), laboratoire LPMG (UMR CNRS 5148), ENSMSE
- **Pr Gilles THURET**, laboratoire BiiGC (UJM, JE2521), Faculté de médecine de St-Etienne

Eligibility

A recent PhD (conferred within the past few years) in optoelectronics or in or a related field is required for this position. Desired qualifications include:

- Good knowledge of optoelectronics,
- experience with optical devices, lenses...
- experience in mechanical engineering

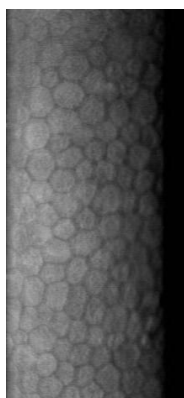
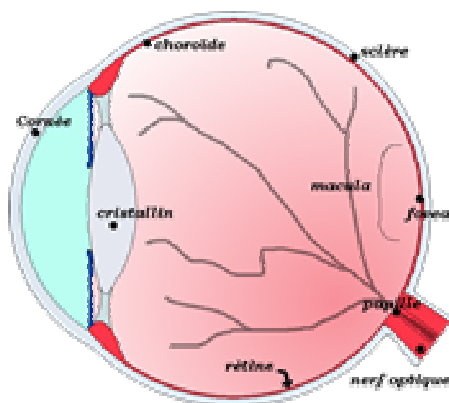
The following qualifications are also required:

- strong communication skills
- the ability to function in a team environment with other researchers
- the demonstrated ability to publish in technical journals
- proficient programming skills (C/C++, matlab, Java...) and some knowledge of image processing techniques

Apply by sending an email with (CV, publications, recommendations) to Yann GAVET (gavet@emse.fr).

Medical context

Cornea endothelium



The cornea is the most anterior lens of the eye. It refracts light rays into the retina. The cornea is a complex tissue composed of 5 layers. Among them, the endothelium is the most inner layer, formed by non regenerative cells responsible for the cornea transparency. It is necessary to evaluate the quality of the corneal endothelium in many circumstances.

The endothelial cells (EC) are visible on patients with the so-called specular microscope.

Aims

This project aims at developing a specular microscope prototype that will extend the field of observation by scanning the cornea and making a (real-time) registration of the images.

