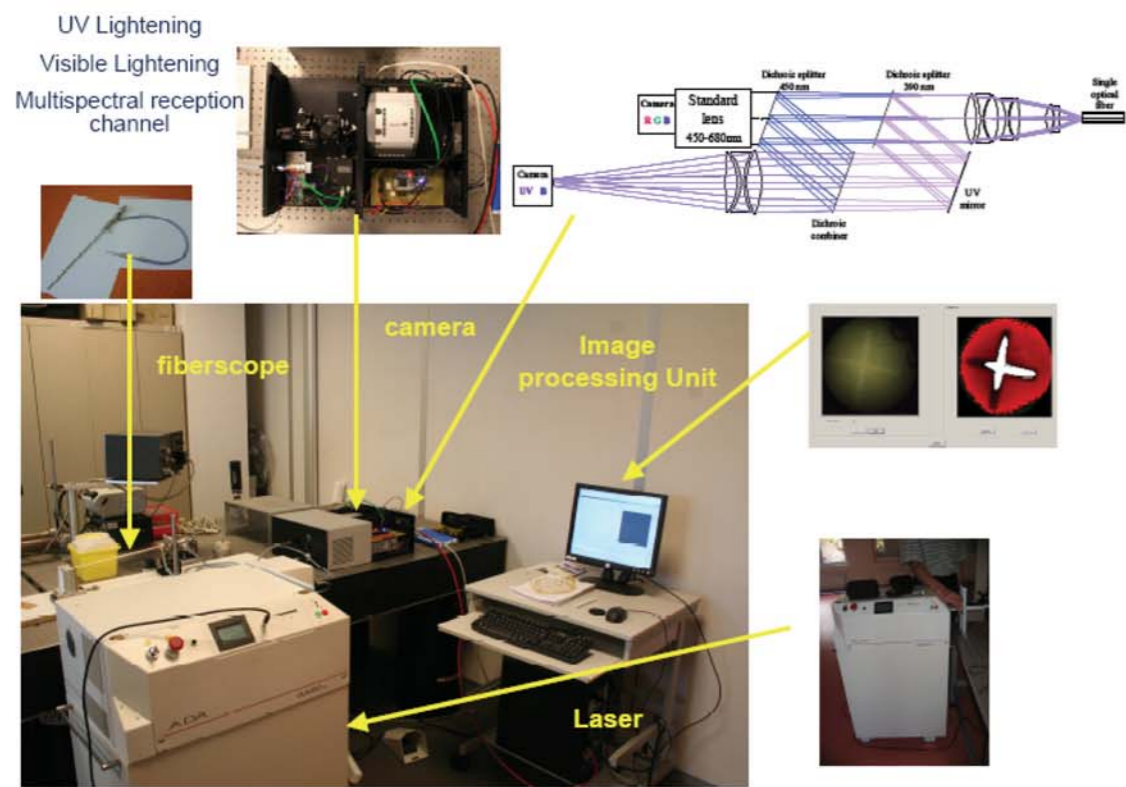
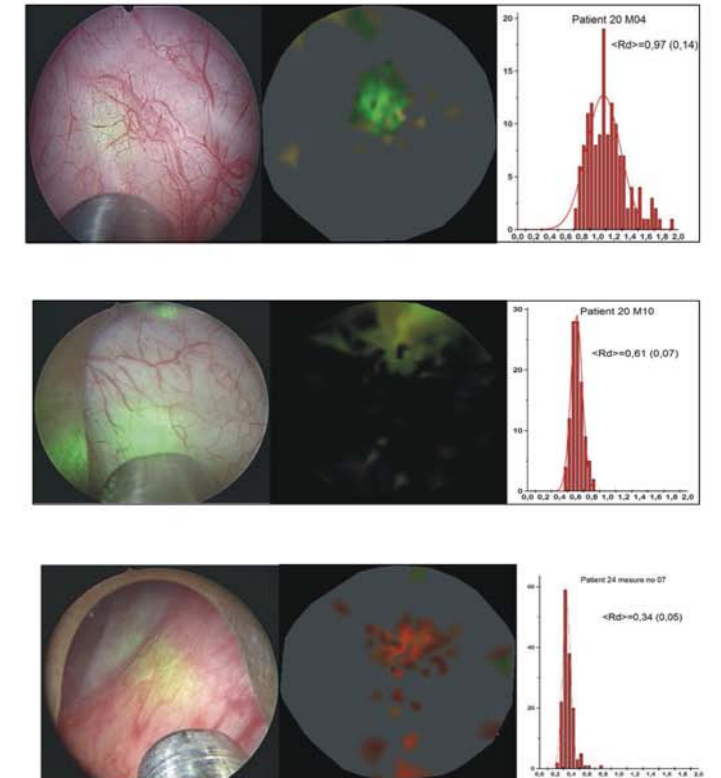
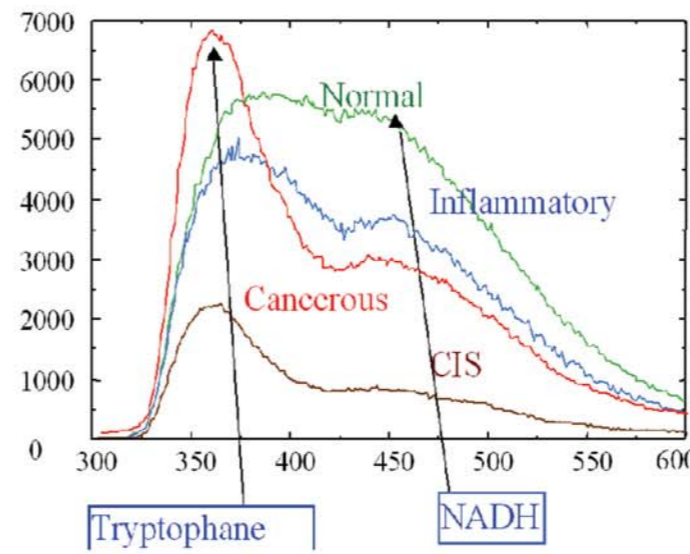


EURIPIDES Forum 2010 in Paris

September 30th – October 1st, 2010 in Paris

Early cancers detection device (UVE EM98)

The UVE EM98 consortium is industrializing a device devoted to early cancers detection whose efficiency had been proven through successful trials undertaken by the University of Villetaneuse. Cancerous tissues are showing NADH and Tryptophane abnormal percentages that, when illuminated under UV light (wavelength: 308 nm), exhibit by self-fluorescence responses in the UV and in the blue slots. A balance between the peak answers at 370 nm and at 450 nm allows for a straightforward classification, telling out the cancerous state of the area which comes under inspection. Such a scaling proves an absolute means.



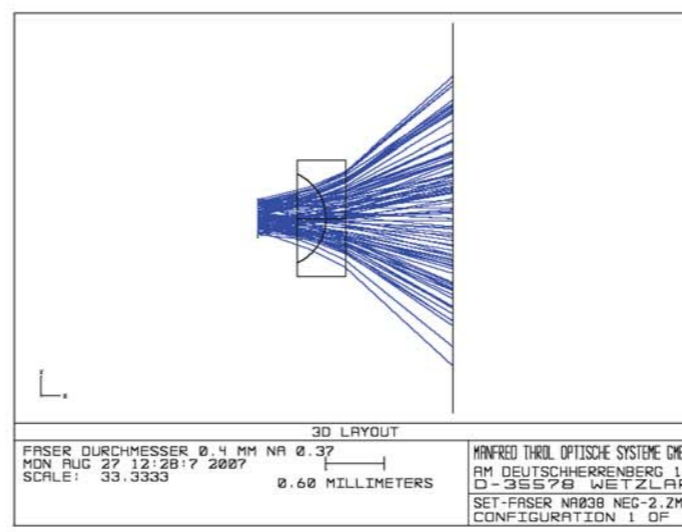
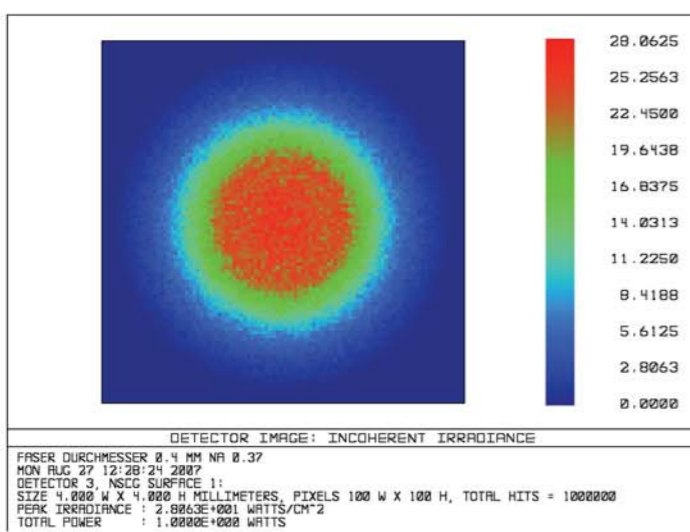
The design should comply with an acceptable signal to noise ratio. All the parameters that could into play (transmissions, resolutions...) have been optimized.

The laser coupling and the distal optics design were a key issue too, in order to meet the best compromises between the fields of view and the UV power budgets.

The device uses a multi-spectral fiber bundle, both dedicated to the visible and diagnosis channels, such a solution is free from any parallax effect. This requires special fiber sets that both exhibit no fluorescence and may build a visible image with enough resolution (100x100) whilst transmitting both UV and blue lights.

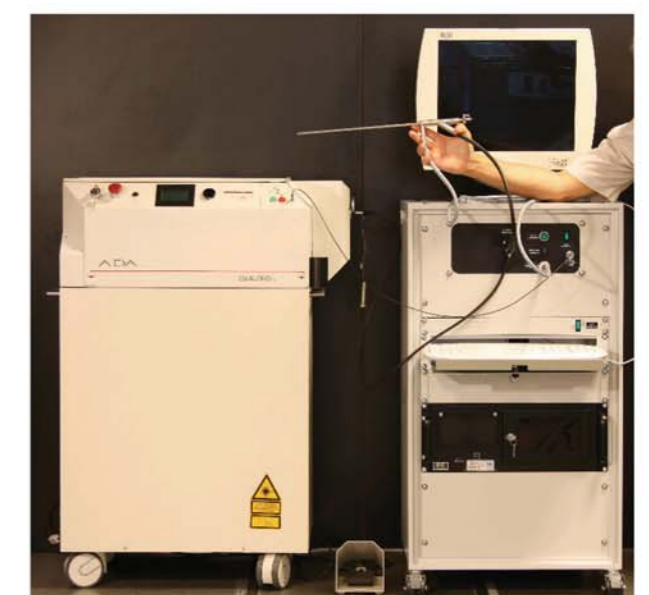
The chore module calls for a beamsplitter architecture with dedicated optical components. Two cameras are coming into play devoted to the direct viewing channel and to the diagnosis path.

Binning processes for the diagnosis channel improve the signal to noise ratio.



2010 works concentrated mainly on:

- The final integration stage and upgrades of the demonstrator to take into account the surgeons feeds back. The device is now frozen in a definitive state, ready for use in hospitals.
- Software implementation and man machine interface development.
- The customization of the endoscopes to cover both urology and bronchoscopy trials.
- The preparation of the experiments in Hospitals (Tenon and CHU St Etienne) that are starting by September: device update and documentation to abide by medical standards, trial plans presentation to the health care administrations (CPP, AFFSSAPS).



THALES ANGENIEUX

