



**THE ECOLE NORMALE SUPERIEURE DE CACHAN
UNIVERSITY PARIS-DIDEROT (Paris 7)
FRANCE**



1-year POSTDOCTORAL FELLOWSHIP



Starting October 1st 2009

Salary 2400 € gross income per month

Title : Magnetofluorescent nanoparticles for non-invasive bioimaging

Hybrid nanomaterials attract considerable interest for the complementary properties arising from the combination of inorganic and organic components. Among them, magnetofluorescent nanoparticles appear extremely attractive for non-invasive probing and imaging of biological tissues. The present project involves an original and versatile electrostatics-based approach toward the elaboration of bimodal materials associating superparamagnetic iron oxide nanoparticles and fluorescent organic nanospheres. Such a route enables the upward control of the size of the objects to be assembled while keeping their intrinsic characteristics (magnetism, emission) in water. The subject will focus both on the fabrication and the optical and magnetic studies of these nanomaterials in solution and living cells. It will be developed in tight collaboration with three laboratories, each specialized in chemistry, biology and physics located on two different sites (ENS Cachan and Paris Diderot) of the Ile-de-France area (France). Candidates for the post-doctoral position should have an expertise in the elaboration of nanoparticles and molecular linear and non-linear spectroscopy. Knowledge in cell culture and /or organic synthesis would be largely appreciated.

If prospective applicants would like to discuss the posts informally, please contact Dr. Eléna Ishow elena.ishow@ens-cachan.fr or Dr. Jean-François Berret jean-francois.berret@univ-paris-diderot.fr

Applications should include a full CV together with names and addresses of two referees.

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References

[1] E. Ishow, A. Brosseau, G. Clavier, K. Nakatani, P. Tauc, C. Fiorini-Debuisschert, S. Neveu, O. Sandre, A. Léaustic *Chem. Mater.* **2008**, 20, 6597. [2] J. Fresnais, J.-F. Berret, B. Frka-Petesic, O. Sandre, R. Perzynski *Adv. Mater.* **2008**, 20, 3877. [3] L. Qi, J.-P. Chapel, J.-C. Castaing, J. Fresnais, J.-F. Berret *Soft Matter* **2008**, 4, 577. [4] L.-H. Liu, K. Nakatani, E. Ishow *New. J. Chem.* **2009** doi: 10.1039/b902018g.