

Ana Flávia Nogueira

Ana Flávia Nogueira received her Ph.D. degree in Inorganic Chemistry at the State University of Campinas (UNICAMP), in Campinas, Brazil, in 2001. Her thesis, entitled “Gratzel solar cells using polymer electrolytes”, under the supervision of Prof. Marco-Aurelio De Paoli, was a collaboration with Prof. James Durrant from Imperial College, London. In 2002, she returned to the group of Prof. Durrant for a post-doc in collaboration with Prof. Serdar Sariciftci, in Linz. The project focused on the investigation of the charge recombination in polymer-fullerene solar cells by transient absorption spectroscopy.

Since 2004, Dr. Nogueira has been an associate professor at UNICAMP. The *Laboratório de Nanotecnologia e Energia Solar (LNES)* was founded in 2006 and has grown to 13 students (including undergraduate, master, PhD and post-docs). *LNES* works within two important research areas with solar cells. We continue to investigate *dye sensitized solar cells* using polymeric materials as electrolytes and hole conducting materials, thereby replacing liquid electrolyte. The studies are focused on the development of more stable and efficient polymer electrolytes, application of new nanostructures (nanotubes, nanorods and doped oxides) and novel Ru(II) polypyridyl dyes.

Our research with *organic solar cells* is more recent. Since 2005, we have been focusing on two important aspects of organic solar cells: (i) an increase in the light harvesting capacity; (ii) improvement in the electronic transport. Our interests include the synthesis and application of chemically modified carbon nanotubes, synthesis of new conducting polymers with improved light absorption and coordinating properties with inorganic nanoparticles, introduction of organic and inorganic dyes in the polymer-fullerene blend and photophysical studies.

Relevant publications:

- 1) J. E. Benedetti, M.-A. De Paoli, A. F. Nogueira, Chem. Commun. (2008) DOI: 10.1039/b717278h
- 2) A. F. Nogueira, B. S. Lomba, M. A. Soto Oviedo, et al. J. Phys. Chem. C., 111 (2007) 18431.
- 3) R. L. Patyk, B. S. Lomba, A. F. Nogueira, C. A. Furtado, A. P. Santos, R. M. Q. Mello, L. Micaroni, I. A. Hümmelgen, Phys. Stat. Sol. (RRL) 1, (2007) R43-R45
- 4) A. F. Nogueira, C. Longo, M.-A. De Paoli, Coord. Chem Rev., 248 (2004) 1455.
- 5) A. F. Nogueira, I. Montanari, J. Nelson, C. Brabec, N.S. Sariciftci, J.R. Durrant, J. Phys. Chem. B, 107 (2003) 1567
- 6) A. F. Nogueira, J. R. Durrant, M.-A. De Paoli, Adv. Mater., 13 (2001) 826.