Monday March 25th, 13.15, **Prof. Stefano Baroni**

I will present some recent work addressing the effects of the solvent (water) on the optical properties of natural dyes. I will break the ice with a short presentation of the physics and physiology of color vision, in the style of popular science. I will then introduce some of the theoretical and computational techniques that are currently used to model the optical properties of complex molecular systems and nanostructured materials. These techniques will be demonstrated with the “prediction” that grass is green, and applied to the optical properties of flavylium, the die that gives aubergines and blueberries their typical deep purple coloration. In the latter case I will show that the main effect of the solvent is to provide a medium allowing thermal fluctuations to fill the gaps that would otherwise characterize the spectrum of the dye at low temperature, thus considerably enhancing optical absorption in the visible range, and making blueberries (deep) blue.