Nadia Ansini (Sapienza University of Rome, Italy)

In this talk I give an overview of my research in Multiscale Analysis of complex systems in Materials Science (perforated domain, thin films, phase transitions) and Variational Evolution Problems. Variational techniques and global minimisation have been proven to be very successful in many applications in materials science. The notion of $\Gamma$-convergence has been introduced to study the asymptotic behaviour of (global) minimizers of energy functionals in the limit when the parameters (related to the multiscale nature of the problem) get small. Even if $\Gamma$-convergence may fail in giving the correct description of the effect of local minimizers, variational techniques can be still applied to follow the pattern of the local minimizers of energy functionals. In this seminar I will present also some recent results on microstructure evolution.