



***Ph.D. School in Chemical Sciences
Cycle XXXVIII***

Proposer: *professor Maria Michela Corsaro*

Research project title: Structural study of bacterial extracellular matrix

Key words: Biofilm, exopolysaccharide, NMR, LPS, *P. aeruginosa*

Research project abstract: The aim of the present project is the structural characterization and the study of the physicochemical properties of polysaccharides isolated from the extracellular matrix of Gram-negative bacteria. The proposal considers *Pseudomonas aeruginosa*, as a pathogenic bacterium, and non-pathogenic bacteria from selected ecological niches, such as polar regions. These bacteria share the formation of biofilm, a community of bacterial cells embedded in the extracellular matrix. The results will increase the knowledge about the key role played by carbohydrate polymers in the biofilm formation, whereas the physicochemical properties will reveal the opportunity to use some of these polymers in industrial applications