

## **NEW ANTIMICROBIAL MATERIALS FOR APPLICATION AD *MEDICAL DEVICES***

The project aims at the preparation of antimicrobial materials for application as Medical Devices acting as barrier against microbial species which may develop into skin lesions and mucous. The active ingredients are based on silica functionalized with silver complexes, both thermally and photochemically stable, and with quaternary ammonium salts or biguanides. The formulations include products for topical, gingival, and dental use.

### *GOALS*

- 1) Functionalization and characterization of materials based on titanium dioxide with antimicrobial cationic species
- 2) Functionalization and characterization of materials based on silica with antimicrobial cationic species
- 3) Functionalization and characterization of materials based on zinc dioxide with antimicrobial cationic species
- 4) Formulation of products for topical and gingival use

### *INSTRUMENTS AND METHODS*

Preparation of metal and metalloid oxides. Preparation of silver(I) complexes. Characterization with spectroscopic techniques.

### *MAIN SUBJECTS*

Inorganic chemistry, Material Science, Pharmaceutical chemistry.

### *RESEARCH GROUP*

Carlo Alberto Bignozzi

### *COLLABORATIONS*

- Prof. Francesco Carinci (Dipartimento di Morfologia, Chirurgia e Medicina Sperimentale, UNIFE)
- Prof. Roberto Cassino (Centro Vulnologico Italiano, Torino)