



LABORATORY OF ANTIMICROBIAL STUDIES

Main objectives and activities of the laboratory

- basic and applied research in the field of antimicrobial modifications of nanofibrous materials, textiles, glass and other surfaces,
- development of new types of antibacterial materials based on nanofibrous membranes or nano-layers,
- testing the effectiveness of the antimicrobial properties of fabrics or nanofibrous membranes, functionalized by specific substances, including the use of nanoparticles of metal oxides,
- testing of filter bacterial efficacy,
- providing expert consultation and expert activities in the field of antimicrobial studies.

Professional focus of the laboratory

Non-pathogenic bacterial strains of Gram-positive and Gram-negative bacteria such as *Staphylococcus Gallinarum* (CCM 3572) or *E. Coli* K-12 (CCM 7929) are used during antimicrobial tests. Restriction of bacterial strains only to non-pathogenic forms due to safety at work, the possibility of using the workplaces for students of PhD studies, for teaching activities, etc.

Specific equipment

- DEN-1B type McFarland Densitometer,
- CLASSIC type vortex shaker,
- Stuart Colony Computer,
- Pioneer PA214 analytical scales (210 g/0.0001g),
- PrimoStar ZEISS microscope,
- 3310 Set SenTix® 41 pH meter,
- PSU-20i multifunctional shaker,
- BOECO minicentrifuge.

Offered technologies and expertise

- modified Test Method AATCC 100 – 2004 for quantitative assessment of antimicrobial activity of textiles and materials with surface antibacterial treatment over time,
- modified Test Method AATCC 147 – 2004 for qualitative assessment of antimicrobial activity of samples based on the evaluation of bacterial growth under the sample or the size of the halo zone present around the sample,
- the evaluation of bacterial filtration efficiency is carried out by the modified ASTM F2101-01.2001 method, which examines the extent to which the filter is able to prevent penetration of the aerosolized form of bacterial solution into the purified area.

