



The SONO Project

A pilot line of antibacterial and antifungal medical textiles based on a sonochemical process

Project Budget: 12,294,034 Euro

Hospital-acquired (nosocomial) infections are a major financial issue in the European healthcare system. The financial impact of these infections counteract medical advances and expensive medical treatments by increasing the length of hospital stay by at least 8 days on average per affected patient, hence adding more than 10 million patient days in hospitals in Europe per year.

The statistics on patient safety in the EU show alarming tendencies:

- 1 in 10 patients are affected by hospital-acquired infections
- 3 million deaths are caused by hospital-acquired infections yearly

An active infection control program of patients and personnel and hygiene measures, have proven to significantly reduce both the number of infections and hospitalisation costs. The SONO project directly addresses the above problems by developing a pilot line for the production of medical antibacterial textiles.

The pilot line will be based on the scale-up of a **sonochemical process** developed and patented at BIU laboratories. The pilot line will use a **sonochemical technique to produce and deposit inorganic antimicrobial nanoparticles on medical textiles, e.g. hospital sheets, medical coats and bandages.**

In the SONO FP7 R&D project, **Cedrat Technologies is in charge of :**

- trade-off & design analysis between piezoelectric and magnetostrictive transducers
- developing a customised ultrasonic tank for generating the ultrasound distribution required for the SONO sonochemical process
- delivering a mechatronic hardware system of the pilot line demonstrating the SONO sonochemical process

For this work Cedrat Technologies will use:

- its electro acoustic design and lab capabilities in the field of innovative sonic or ultrasonic transducers
- its experience in their applications in new process deriving from ultrasonic cleaning, mixing, homogenising and ultrasonic reactors.

The partners of the project are: Bar Ilan University (Israel), Coventry University (UK), Universitat Politècnica de Catalunya, Group of Molecular and Industrial Biotechnology (Spain), National R&D Institute for Textile and Leather (Romania), WESSEX Institute (UK), Torras Valenti (TORVAL) S.A. (Spain), VIATECH Ltd. (Russia), Cedrat Technologies S.A (France), Kitozyme (Belgium), Pielaszek Research (Poland), Davo Star Impex SRL (Romania), OSM-DAN Ltd. (Israel), Klopman International S.R.L (Italy), Environment Park S.p.A. (Italy), Afcon Software and Electronics Ltd. (Israel), AITEX (Spain), Emergency Medicine Institute "Pirogov" (Bulgaria).

