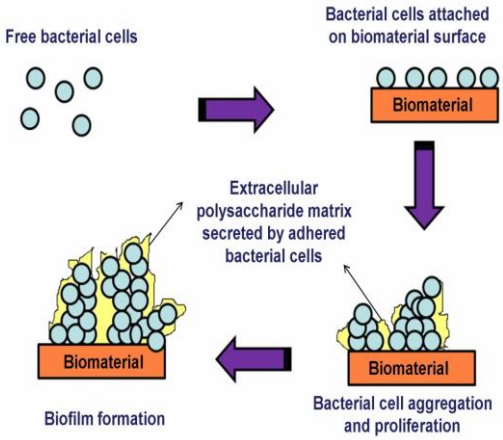
BACTERIA CULTURE FACILITY

The Bacteria Culture facility was established in 2008 at Department of Materials Science and Engineering with financial contribution from Department of Biotechnology, India. This facility enables to assess the *in vitro* antibacterial property of various biomaterials. The facility is available in the Laboratory for Biomaterials.

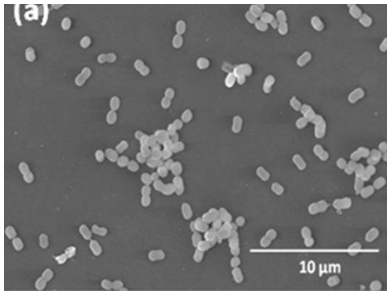
In view of the large amount report in prosthetic infection in recent years, the search for a good antibacterial material with excellent cell adhesion property has been a major research thrust in the area of biomaterials. Bacteria Culture lab essentially enables researchers to assess the antibacterial property of the biomaterials under biologically sterile environment, both quantitatively and qualitatively. The results enable us to determine the bacteriostaic/bactericidal nature of the biomaterials.

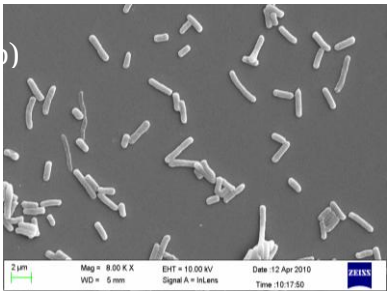
With the existing facilities, both gram-positive (*Staphylococcus epidermidis* and *Staphylococcus aureus*) and gram-negative bacteria (*Escherichia coli*) are routinely cultured on materials surface.

Student performing bacteria culture experiment



Mechanism of bacterial cell adhesion





SEM images of S. Epidermidis (a) and E. Coli (b), adhering on material substrates

UV-Visible Spectrometer

Optical density of bacterial suspension in the planktonic state can be determined using Double beam UV visible spectrophotometer. Presently, the facility is also available to understand the antibacterial efficacy of magnetic field under static magnetic field of low intensity using an in-house fabricated magnetometer.

Contact: Bikramjit Basu, Department of Materials Science and Engineering; bikram@iitk.ac.in