

**MATERIALS
ENGINEERING
SEMINAR**

Date: Thursday,
July 14, 2011
Time: 3:30 refreshments
3:45 - Seminar
Place: ARMS 1109

**Purdue Materials:
Infinite
Possibilities**



**“Bacteriosafe: A European Union Collaboration for Active Wound Dressings based on Biological Mimicry”
Also featuring information about German research and study, for those interested**

by

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ABSTRACT

The aim of the BacterioSafe consortium is to construct, test and develop a unique active wound dressing, which incorporates novel colourimetric sensor and active therapeutic processes for detecting and counteracting pathogenic bacteria in wounds. The inspiration of this project is the natural nano-biological mechanism of bacterial attack of healthy cells. We mimic this natural process by using these pathogenic factors to liberate engineered and biologically derived antibiotics/antimicrobials and indicating molecules from highly designed surface immobilized nanocapsules. These are immobilised on currently available wound dressing materials such as polypropylene or polyethylene non-wovens using plasma assisted processes. This will minimize the need for frequent traumatic changes of wound dressings and will provide a simple optical indicator of bacterial infection.

This is particularly critical in burn wounds where delayed detection of bacterial infection can result in patient death.