

ITC Research Student Seminar 2016-17

Date: 20 March 2017 (Monday)

Time: 4:00 pm – 5:00 pm

Venue: Room ST602, 4D Theatre, The Hong Kong Polytechnic University

Speaker: GUO Yujuan (PhD Student)

Topic: Safe and non-fouling reactive antibacterial agent

Speaker: NG Kwok Hei (PhD Student)

Topic: Development of Dual Sensitive Textiles for Interactive Textile Design

Abstracts

Topic: Safe and non-fouling reactive antibacterial agent

Biofilms breeding on medical gauze is proved to be a serious problem to wound healing. Here, we synthesized a kind of zwitterionic chemical-pyridine sulfobetaine which is nontoxic and non-biofouling. When applied onto medical cotton gauze, we can solve the problem of biofilm breeding. With a pad-dry-cure finishing, the antibacterial rate of modified cotton gauze could reach to above 99.90% against both gram-negative E.coli and gram-positive S.aureus. In addition, the modified cotton gauze exhibited a slightly reduced air permeability and a significantly improved hydrophilicity compared to the pristine cotton gauze, which would be better keeping wound moist and help wound healing. The modified cotton gauze is more skin compatible confirmed by skin stimulation test.

Topic: Development of Dual Sensitive Textiles for Interactive Textile Design

This presentation showcases part of the development phase of an ongoing textile design research project titled Creation of Interactive Textiles with Adoption of Environmental Sensitivity. By combining design creativity, interactive ideologies, human perception theories and textile craftsmanship, the research project investigates and develops value-added smart textile design. At the development stages, three parallel explorative threads with foci on investigation of reactive medium, development of interactive yarns and textiles, and exploration of potential textile craftsmanship have been conducted divergently. As part of the parent research development, this presentation exhibits a cross-thread exploration combining thermo- and photo- sensitivities in interactive textile design. Firstly, reactive yarns were developed separately with the aforementioned environmental sensitivities. Secondly, attempts were then made to cross-combine the two properties to create hybrid yarns. Lastly, actual applications were carried out to prove the design feasibility of the developed textile materials. With reference to the explorative swatches and prototypes created, the ideology of interactivity and human perception on environmental sensitive textiles are discussed as the conclusion.

~ All are welcome ~