Annotation of Doctoral Thesis Topics for Degree Programme: Material Sciences and Engineering, course in „Biomaterials and Biocomposites“

Topic:	**Synthesis and Characterization of Bacterial Cellulose and its composites for Pharmaceutical Applications**
Supervisor:	**doc. Nabanita Saha, MSc. Ph.D.**
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Annotation:

Bacterial cellulose (BC) is an extracellular polysaccharide produced by microbes, considered as a natural biopolymer. The microfibrillar structure of BC is providing the outstanding properties such as bioadhesiveness, high tensile strength, high degree of polymerization and crystallinity index etc. Moreover, BC is highly porous material that enables the release of antibiotics or other drugs in wounds, while acting as a very effective physical barrier against any external infections. Hence, effort will be given for synthesis and characterization of BC in an inexpensive production condition and then focus will be given for the preparation of novel BC based biocomposites /scaffolds which will be biodegradable and applicable for pharmaceutical applications.

Requirements:

Knowledge of general and macromolecular chemistry and physics at the university level. Good knowledge of the English language or a potential to the improvement. Basic manual and laboratory work skills. Ability to work independently.