

**Title** – Harnessing Bacterial Cellulose as a Stimulus for Sustainable Fashion: Analyzing Bacterial Cellulose within a Triple-Bottom line framework

**Program of Study** – Fashion Design

**Presentation Type** – PowerPoint and Print Poster

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**Category** – Theoretical Proposal

**Abstract example:** The aim of this study is to investigate how the process of growing bacterial cellulose (BC) can further aid sustainability within the field of fashion design. Bacterial cellulose, (otherwise known as microbial cellulose and biocellulose), is produced from bacteria with the ability to produce cellulose. Bacterial cellulose and plant cellulose have the same chemical structures, but differ in their physical and chemical compositions. In addition to this, bacterial cellulose displays a variety of beneficial properties such as high crystallinity, high water tensile strength, strong tear resistance, retains shape efficiently, and is able to be woven into various shapes. Bacterial cellulose is unique in that it circumnavigates most of the traditional fashion manufacturing processes. By placing bacterial cellulose within a triple-bottom line framework (TBL), this study analyzes how bacterial cellulose can make an impact within the

fashion industry through the social, environmental, and commercial realms. Previous studies have touched upon the possible uses of bacterial cellulose, however little research has been conducted in regards to analyzing bacterial celluloses' potential within a sustainable fashion commercial framework. The question of whether bacterial cellulose can be a practical alternative within the fashion industry, and the challenges bacterial cellulose would need to overcome are also addressed. This study begins by explaining the process of growing bacterial cellulose, expounds on its applications within a triple-bottom line framework, and describes the challenges necessary to overcome in order to be successfully implemented within the industry of fashion. The results suggest that with future research, bacterial cellulose can become a potential impactor and catalyst for sustainability within the fashion industry.