



Conference Abstract

## 5th The Holy Quran & Science Conference and Exhibition – 2018

Sunday November 25, 2018

1194 Matheson Blvd E Mississauga, ON L4W 1Y2 Canada



### Conference Abstract

#### Synthetic Biomaterials for Health Applications

##### Dr. Marya Ahmed

PhD from University of Alberta in Chemical Engineering. PDF at University of Toronto. She joined University of Prince Edward Island in Dec. 2016 as an Assistant Professor in Chemistry and Engineering.

**Ethics approval and consent to participate:** No ethical approval needed for this research work.

**Consent for publication:** Author is agreed to submit this abstract for publication in this research journal.

**Availability of data and materials:** The information and data collected and/ or incorporated in this study is included in this manuscript.

**Key words:** Synthetic, Biomaterials, Health, Applications

#### Speakers Profile

Dr. Marya Ahmed obtained her PhD from University of Alberta in Chemical Engineering. As a PhD student from University of Alberta, her research was focused on the synthesis of carbohydrate-based polymers for gene delivery. She went to California Institute of Technology to acquire her first postdoctoral fellowship (PDF) on the topic of antibody conjugated nano particles for cancer treatment. Her second PDF at University of Toronto was focused on the synthesis of peptide drug conjugates to treat drug resistant bacterial infections. She joined University of Prince Edward Island in Dec. 2016 as an Assistant Professor in Chemistry and Engineering. She is actively working on the field of biomaterials to treat emerging drug resistant anomalies in humans. She has published more than 30 peer-reviewed manuscripts and 10 book chapters on this topic.

#### Abstract

The advances in the material science and engineering has enabled the development of innovative biomaterials for the range of health applications such as drug delivery carriers for drug resistant disorders, engineering of tissue constructs and for water purification

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**Dr. Marya Ahmed** PhD from University of Alberta in Chemical Engineering. PDF at University of Toronto. She joined University of Prince Edward Island in Dec. 2016 as an Assistant Professor in Chemistry and Engineering.

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technologies. The physiochemical properties of synthetic biomaterials are well-known to impact their biological applications. The tailor-made biologically inspired biomaterials provide an excellent platform to tune the biological properties of synthetic materials, as a function of their physiochemical characteristics such as molecular weight, architecture, and composition. The research program in Ahmed group is focused on the development of novel, biologically inspired materials (polymers, nano particles, composites and hydrogels) for health applications. We are specifically working on the synthesis of vitamin B5 functionalized polymers, peptides, nano particles and hydrogels and are investigating their antifouling and antibacterial efficacies to overcome drug resistant bacterial anomalies in vitro. Other research projects in Ahmed laboratory focus on the synthesis of polymeric hydrogels and composites for water purification and water retention applications and ensure the availability of clean water supply for arid regions.



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