Exploring Biomedical Applications of Multifunctional Polyphosphazenes

Renowned IBBR chemist to speak at the American Chemical Society National Meeting

(Rockville, MD, August 16, 2017) Alexander K. Andrianov, Ph.D., Research Professor at the University of Maryland’s Institute for Bioscience and Biotechnology Research (IBBR), whose research led to the formation of Innovo Biopolymers LLC, is a co-organizer of a “Polyphosphazenes in Biomedicine, Engineering & Pioneering Synthesis” Symposium at the 254th American Chemical Society (ACS) Meeting, scheduled for August 20-24, 2017, in Washington, DC. The symposium will feature high-level presentations by global experts in the field of polyphosphazene chemistry. Dr. Andrianov is one of world leaders in the technology, with more than 25 years of combined academic and industry experience in the discovery and development of polyphosphazenes, a family of macromolecules, which are uniquely positioned for biomedical applications. Dr. Andrianov’s presentation, “Self-assembling Polyphosphazene Systems and Their Biomedical Applications,” will be delivered on Sunday, August 20, at 9:05 AM in Marquis Salon 12, at the Marquis Marriott, Washington, DC.

Polyphosphazenes are synthetic polymers (large molecules composed of multiple repeating subunits) that offer unprecedented versatility for life sciences applications due to their biocompatibility, tunable biodegradability, and dial-in multi-functionality. Due to these features and unique synthetic approach they are poised to be an important toolkit in revolutionizing therapeutic and preventative disease treatment methods. For example, when appropriately formulated with a biologic, some polyphosphazenes can mask the protein drug from being recognized by the immune system, potentially
allowing for extended bioavailability of the therapy in the patient. Others can optimize the performance of vaccines or improve biocompatibility of medical devices. At the symposium, Dr. Andrianov’s laboratory will be presenting five additional technical presentations/posters on various aspects of polyphosphazene applications in drug delivery and biomaterials. “The extent to which we can vary and control physico-chemical characteristics and biological behavior of macromolecules, which are based on the same synthetic platform, is remarkable” says Dr. Andrianov.

“IBBR’s mission is to conduct ground-breaking research that provides solutions to major medical problems important to society through interdisciplinary collaboration. There are multiple biomedical and commercial applications for Dr. Andrianov’s work, including biomedical device coatings, multifunctional drug delivery carriers, and vaccines and immunotherapies,” said Dr. Thomas Fuerst, Professor and Director of IBBR.

Dr. Andrianov’s research is also supported by the MPowering the State initiative. “MPower” is a strategic partnership between the University of Maryland College Park (UMCP) and the University of Maryland Baltimore (UMB) designed to expand research collaborations, promote innovation and impact, and leverage the research strengths across the campuses to develop novel, multidisciplinary solutions to major unmet medical and public health needs.

About IBBR

IBBR is a University System of Maryland joint research enterprise among the University of Maryland College Park, the University of Maryland Baltimore, and the National Institute of Standards and Technology. The Institute serves as the nexus between academic research and commercial application, bringing together all of the critical elements necessary to pursue solutions for major scientific and medical challenges. Through collaboration and interaction among academia, government and industry, IBBR focuses on structure-based design, characterization and testing of proteins and nucleic acids, and conducting groundbreaking research to develop innovative translational applications. IBBR’s leverages its unique infrastructure and capabilities to advance projects and innovations towards commercialization in real world applications. The Institute also serves to expand the economic base of science and technology in the state of Maryland and at the national level.

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