



Topic of the Speech:

Development of Effective Methodology for Engineering next Generation High Performance PPE

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Professor Guowen Song received his PhD degree in Textile Engineering, Chemistry and Science, at North Carolina State University's College of Textiles in Raleigh, North Carolina. Currently he is the Noma Scott Lloyd Chair in the Department of Apparel, Event and Hospitality Management (AESHM) at Iowa State University's College of Human Sciences.

Song's academic interest is in functional textile materials and protective clothing and systems to improve human health and safety. His work involves modeling studies of human physiology, textile materials and protective clothing, development of devices and test protocols, and analysis of textile and clothing performance. These studies include lab simulations, application of instrumented manikin technology and special designed human trials, including 3D body scanning, human motion analysis approach.

Dr. Song has published over 100 scientific papers in peer-reviewed journals and conference proceedings. He authored several books and contributed a dozen chapters to books in his field of study.

ABSTRACT SUBMISSION

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ABSTRACT (NO MORE THAN 500 WORDS:)

Gloves, boots, and helmets as subsystems in PPE are critical in responsive operations for firefighters, military personnel, medical practitioners, and law enforcement, as well as industrial and agricultural workers to ensure their safety, health and wellbeing. However, the traditional means of developing and evaluating PPE has been extremely limited due to the lack of knowledge in human physiology, advanced measurement technology, and performance analysis and evaluation. The proposed methodology emphasizes the innovative role that engineering can play by integrating modeling, new measurement technology, and human tests into PPE development, functional design, and performance prediction. As a new approach, it will lead to revolutionary advances in PPE development and manufacturing, as well as training and preparing the next generation of scientists and engineers.