



Topic of the Speech:

Methodology and Parameters Affecting the Clothing Comfort

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Professor Seung Kook An obtained his Ph.D. at the Fiber and Polymer Science Program, North Carolina State University in 1992. He got MS degree at the Department of Textile Engineering, Chemistry, and Science, North Carolina State University in 1988. After working at National Industrial Research Institute for two years, he had been a professor of the department of Organic Material Science and Engineering at Pusan National University until 2020. He served as a director of Research Institute of Industrial Technology from 2011 to 2013, and was the director of RIS in textile material for transportation vehicle from 2011 to 2021. He has been the chairman of Korea Association of Tech Textile Industry (KATTI) from 2017. He served as the Korean delegate for ISO TC94/SC13 and ISO TC94/SC14 for 20 years. He served as a Vice President of Korean Fiber Society in 2010 and 2018.

His research areas are protective clothing, physical properties of industrial textile products, comfort properties of industrial fabrics, and production technology of multifunctional flame resistant interior textile products.

ABSTRACT SUBMISSION

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Methodology and Parameters Affecting the Clothing Comfort

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ABSTRACT (NO MORE THAN 500 WORDS:)

Three major factors, physical, physiological, and psychological factors are contributed to clothing comfort. On the physiological side, clothing has two major components, tactile and thermal comfort, which interact with each other. The criterion for thermal comfort is to maintain the energy balance between body and environment without energy storage nor heat loss. Tactile comfort is based on the mechanical and thermal sensation while thermal comfort is based on thermodynamics between human body and its environment. Though tactile comfort is affected by psychological factors, heat and moisture exchange plays an important role in determining both tactile and thermal comfort. The parameters controlling heat and moisture transfer are divided into three related categories, environmental variables, physical activity levels, clothing parameters. The three most influential parameters of environment are temperature, relative humidity, and air movement. The magnitude of the metabolic rate, M , is a function of the activity of the person. Values of M are different for various types of work, exercise and other physical activities. Clothing parameters are mainly physical and structural properties, thermal properties, water transport properties, mechanical and surface properties. This research identified factors contributing to the comfort of aramid shirting fabrics used in protective apparel applications. Eight shirting materials, five aramid and three control shirting fabrics were used. The surface and mechanical properties of fabrics are important determinants of comfort since they influence the physiological reaction of the skin to fabric contact and movement, and may control the degree of the skin-fabric contact. Measurement KES mechanical properties usually associate with hand showed that aramid shirting fabrics were stiffer in extension, shearing and bending than comparable control shirting fabrics.