

IIT Delhi develops PPE coverall to avoid COVID-19 infection

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New Delhi, May 19th (India Science Wire): IIT Delhi's Department of Textile and Fibre Engineering has developed the technology for Personal Protective Equipment (PPE) Coverall (Integrated Body Suit and Shoe Cover) for the protection of doctors, nurses, paramedical staff and others from COVID-19. Researchers at IIT Delhi have been actively involved in the development of high-functional and specialty textile materials and has successfully commercialised various products earlier too.

Dr. S.M. Ishtiaque, Professor Emeritus, Department of Textile and Fibre Engineering, IIT Delhi, and his student, Dr. Biswa Ranjan Das, Scientist 'D' and Assistant Director, Defence Material and Stores Research and Development Establishment (DMSRDE), Defence Research and Development Organisation (DRDO), Kanpur, have developed an advanced version of PPE coverall, which meets the criteria specified by the Ministry of Health and Family Welfare, Government of India.

A special coating has been applied over light and compact polyester woven fabric which has permitted to maintain the weight of PPE coverall lighter. It is found to be effective for complete protection against penetration of coronavirus. It has excellent anti-bacterial properties which is not generally found in most of the commercially available PPE coveralls.

Special-grade polyurethane coating of the coverall provides very smooth surface feel and adequate clothing breathability and full comfort to a user. The outer face of the coverall displays excellent water and oil repellency, which can make coronavirus over the fabric roll off with ease. It can be reused three times; hence, the effective cost is very low, compared to others. Available in four sizes (both Body Suit - S, M, L and XL and Shoe Cover - 1, 2, 3 and 4) to fit the complete range of users, as opposed to Universal/Limited size in commercially available coverall. The researchers have collaborated with G. D. International company to produce 1,20,000 coveralls a month.

"The advanced version of PPE coverall that we have developed is set to emerge as an improvised product in the national and international markets, bestowing several special functional features and meeting the requirements for added comfort. Breathability and feel of the coverall has been a major challenge and we have ensured we reach adequate levels of breathability and a softer feel, to support extended wearability," said Dr. S. M. Ishtiaque, Professor Emeritus, Department of Textile and Fibre Engineering, IIT Delhi.

COVID-19, the ongoing pandemic, is spreading across the globe and has resulted in the death of over three lakh people, so far, while many infected with the virus are undergoing treatment.

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Covid -19 PPE Coverall (Body Suit and Shoe Cover)