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IIT-B designs models for improving hip and knee implants

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The developed technology is in level 6 of the readiness level



Scientists at the Indian Institute of Technology Bombay (IIT-B) have developed analytical models that can predict topography of electrical discharge textured (EDT) surfaces, aiding their customisation for improving hip and knee implants.

Dr Suhas S Joshi, Professor at IIT-B has developed analytical and numerical models for the prediction of surface topography which were validated against experimental data. The work is supported by the Advanced Manufacturing Technologies programme of the Department of Science & Technology.

Electrical discharge textured surfaces have suitable surface topography and surface chemistry to promote tissue growth and adhesion. Surface topography prediction is important in EDT surfaces as the process generates characteristically random surfaces that are very difficult to predict.

To optimise the EDT surface topographies for different applications such as orthopaedic implants and rake face of tool inserts, the topography is needed to be known at the design stage through suitable methods of topography prediction.The developed technology is in level 6 of the Technology Readiness Level.