

Fabrication of Highly Roughened Zirconia Surface by a Room Temperature Spray Coating

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Abstract : Zirconia has biological, mechanical and optical properties, so, it used as a dental implant material in human body. But, it is difficult to form directly bonding with living tissues after the procedure and induces the falling away from implanted parts of the body. To improve this phenomenon, it is essential to increase the surface roughness of zirconia implants and induce a forming-ability of strong bonds. In this study, we performed a room temperature spray coating on zirconia specimen to obtain a highly roughened zirconia surface. To get optimal surface roughness, we controlled the distance between the nozzle and the substrate, coating times and powder condition. Bonding microstructure, surface roughness, and chemical composition of the coating layer were observed by SEM, XRD and roughness tester.

Keywords : implant, aerosoldeposition, zirconia, dental

Conference Title : ICCMC 2018 : International Conference on Ceramic Materials and Components

Conference Location : Bangkok, Thailand

Conference Dates : February 08-09, 2018