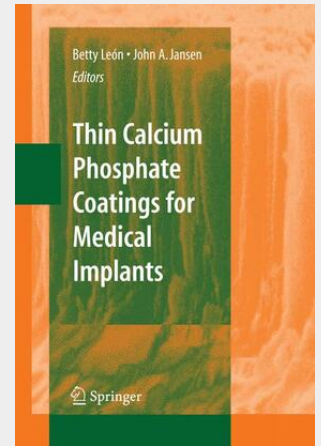


Thin Calcium Phosphate Coatings for Medical Implants

Calcium phosphate coatings (50 mm thick), especially those made with hydroxyapatite (HA), produced by the plasma-spraying process have been successfully used on orthopedic and dental implants to improve fixation of these implants in bone. Thin calcium phosphate coatings (10mm thick) formed by various techniques other than plasma spraying may be the successor of the current thick plasma-sprayed coatings because of their improved properties. Like plasma-sprayed HA coatings, these alternative calcium phosphate thin coatings are capable of enabling bone formation on their surfaces and forming a bond with the newly formed bone. In addition, the thin calcium phosphate coatings have shown better adhesion to substrates and are more stable in the biological environment because they have more uniform structure and composition than plasma-sprayed HA coatings. Moreover, some of these thin calcium phosphate coatings can be formed on all kinds of substrates including polymers and on the entire surfaces of complex geometries such as porous surfaces.

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