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Photostimulated defect formation in gel-derived biomaterial

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Abstract

Intensive research in the field of biomaterials proved that introducing bone implants to a human body causes a modification of an electric field connected with the bone surface. It is possible that this may be, to a great extent, the cause of an adverse reaction of the body to the implant. The surface of implant materials may be highly variable depending on the preparation procedure and external agents. The aim of the investigation was to confirm the porosity of the biomaterials (gel glasses, corundum and cement), using a scanning and optical microscope, and thermoluminescence. The charge transfer was measured by a photo-stimulated exoemission method. The measurement results prove a high sensitivity of our experimental method to the effects of the surface glass modifications. Moreover, the results of our measurements allow preliminary identification of the transport mechanism in the material under consideration.



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