BANDO N. 400.5 ISMN PNRR

Selezione per titoli e colloquio ai sensi dell'art. 8 del "Disciplinare concernente le assunzioni di personale con contratto di lavoro a tempo determinato", per l'assunzione, ai sensi dell'art. 83 del CCNL del Comparto “Istruzione e Ricerca” 2016-2018, sottoscritto in data 19 aprile 2018, di una unità di personale con profilo professionale di Ricercatore III livello, presso l'Istituto per lo Studio dei Materiali Nanostrutturati - Sede di Palermo con assegnazione presso la URT di Messina – CUP B55C22004100001.

Domande codice 02

1) La candidata illustri la sua esperienza curricolare.

2) La candidata illustri le competenze acquisite relative all’art.2 lett. B del bando.

3) La candidata mostri alla commissione attraverso un esempio, la sua capacità di analisi relativa all’art.2 lett. B del bando.

La candidata legga e traduca il brano in inglese allegato in busta

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Abstract: The mechanical and biological behaviors of PMMA/Al2O3 composites incorporating 30 wt.%, 40 wt.%, and 50 wt.% of Al2O3 were thoroughly characterized as regards to their possible application in implant-supported prostheses. The Al2O3 particles accounted for an increase in the flexural modulus of PMMA. The highest value was recorded for the composite containing 40 wt.% Al2O3 (4.50 GPa), which was about 18% higher than that of its unfilled counterpart (3.86 GPa). The Al2O3 particles caused a decrease in the flexural strength of the composites, due to the presence of filler aggregates and voids, though it was still satisfactory for the intended application. The roughness (Ra) and water contact angle had the same trend, ranging from 1.94 μm and 77.2° for unfilled PMMA to 2.45 μm and 105.8° for the composite containing the highest alumina loading, respectively, hence influencing both the protein adsorption and cell adhesion. No cytotoxic effects were found, confirming that all the specimens are biocompatible and capable of sustaining cell growth and proliferation, without remarkable differences at 24 and 48 h. Finally, Al2O3 was able to cause strong cell responses (cell orientation), thus guiding the tissue formation in contact with the composite itself and not enhancing its osteoconductive properties, supporting the PMMA composite’s usage in the envisaged application.