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Title of the Abstract: 3D Printing and Electrospinning: Applications in Drug Delivery and Tissue Engineering

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Abstract:

3D printing and electrospinning are example of technologies that have been widely used in other industries, however are new to Pharmaceutical Industries and for Tissue Engineering Applications. Therefore, the use of these techniques in drug delivery and tissue engineering, including the use of state-of-the-art characterisation methods (e.g. Bio-AFM, ToF-SIMS, nanoCT) will discussed in this talk.

The first part will focus on the preparation of drug-loaded polymeric electrospun nanofibers. The purpose of this study is to examine any potential effects, chemical and mechanically, of drug-loaded electrospun nanofiber scaffolds. Biopolymers that used for biomedical applications was loaded with either antibacterial agents or broad-spectrum antibiotics. The electrospun fibres were characterised through various methods in order to measure the drug efficacy, antibacterial properties, and drug-polymer interactions.

There are a number of different applications within medicine that require materials to be developed with the optimal characteristics, such as their strength, rate of degradation, and porosity, as well as their shapes and sizes. 3D printing process patented in 1986, however only recently have be utilised in the field of tissue Engineering using also bioprinters. Therefore, in the second part, 3D printed systems that have be formulated using advanced additive technologies and characterised using advanced characterisation techniques will be discussed.

Biography:

Dimitrios Lamprou (Ph.D., MBA) is Reader in Pharmaceutical Engineering and MSc Programme Director at the School of Pharmacy in Queen's University Belfast (UK; a member of the Prestigious Russell Group) and Visiting Researcher at University of Strathclyde (Glasgow, UK) with experience of teaching in Higher Education, conducting research (60+ publications, 200+ conference abstracts, 60+ Invited Presentations) and securing national and international funding (£2M+). His Group Research Interests focused on five distinct areas: Biosurface Engineering, Electrospinning, Microfluidics, Nanoanalysis, and Printing of Medicines.

Research Interests: Biosurface Engineering, Electrospinning, Microfluidics, Nanoanalysis, and Printing of Medicines.

References:

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Suggestions of colleagues/Professors/scholars to send invitation (if any)

Suggestions of Sessions to the conference (if any): Nanotechnology Applications for Tissue Engineering