COINS Seminar #46

【Date】July/31/2019（Wed.）16：00～17：00（Registration Open at 15：30）
【Venue】Innovation Center of NanoMedicine (iCONM) 3F 3001 Meeting room
【Registration】URL: https://www.cis-trans.jp/coins_seminar46/index.html

Title：**Nanoparticles and Nanofibrous Scaffolds Combined with Stem Cells for Advanced Therapies**

Abstract：Many biomaterials have been proposed to produce scaffolds aiming the regeneration of many tissues. We have a particular interest in developing systems combining natural polymers and synthetic biodegradable polymers. By proposing those systems for those demanding applications, we aim at obtaining biomaterial systems with enhanced properties namely mechanical properties, processability, cell-friendly surfaces and tunable biodegradability. Our biomaterials may be processed by melting routes (solvent-free) into devices with wide applications such as biodegradable scaffolds, films or particles and adaptable to many biomedical applications.
As an example of processing technologies, electrospinning has recently gained popularity as a simple and versatile technique to produce synthetic polymeric ultrafine fibers. This technique allows the production of non-woven meshes with fiber diameters in the nanometer range, which results in a high surface area-to-volume ratio and high porosity. Additionally, these nanofiber mesh can mimic the extracellular matrix of human tissues and, therefore, can be used as scaffolds for Tissue Engineering (TE) applications.
Many sources of cells were considered for tissue engineering. Embryonic, iPS and adult stem cells are among the most promising to achieve the cell numbers required to have therapeutic relevance. We have been proposing adult stem cells from different sources for bone and cartilage tissue engineering applications.
This talk will review our latest developments using biodegradable biomaterials and nanofibre meshes in the context of bone and cartilage tissue engineering applications.

Speaker：Nuno M. Neves

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Position：Associate Professor/Vice Director of 3B's

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＜CV＞

Nuno M. Neves has been involved in biomaterials research since 2002 and is currently vice-director of the 3B's Research Group of the University of Minho. He has worked several periods abroad at the University of Twente, in a sabbatical leave at the University of Tokyo, Japan (at Prof. Kazunori Kataoka's lab) and as a visiting professor at the University of Trento, Italy. He has coordinated various projects funded by the Portuguese Foundation for Science and Technology, coordinates projects financed by regional funds, and is the Project Leader of the 3B's Research Group participation as partner in various European Projects. As a result of these projects he is currently supervising the work of more than 20 researchers. He is the author of 179 publications indexed in ISI Web of Science, with an h-factor of 40 and a total number of citations of over 4900.

＜Key words＞

Advanced biomaterials, Functional Surfaces; Scaffolds; Stem Cells; Tissue Engineering and Regenerative Medicine

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