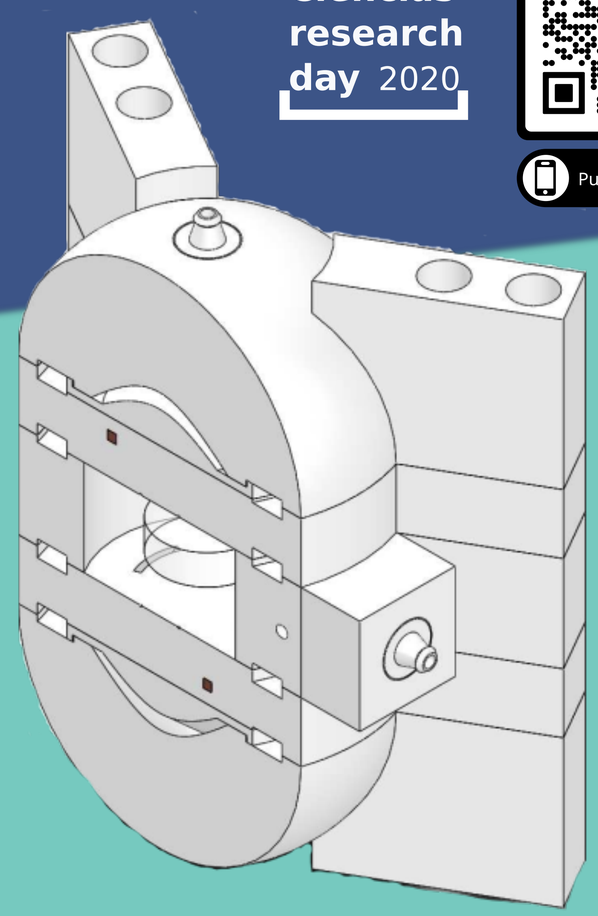
#Stimuli2BioScaffolds

How to improve Tissue Engineering bioreactor solutions to deliver accurate and replicable electromagnetic (EMS) and mechanical stimulation?

Ciências research day 2020

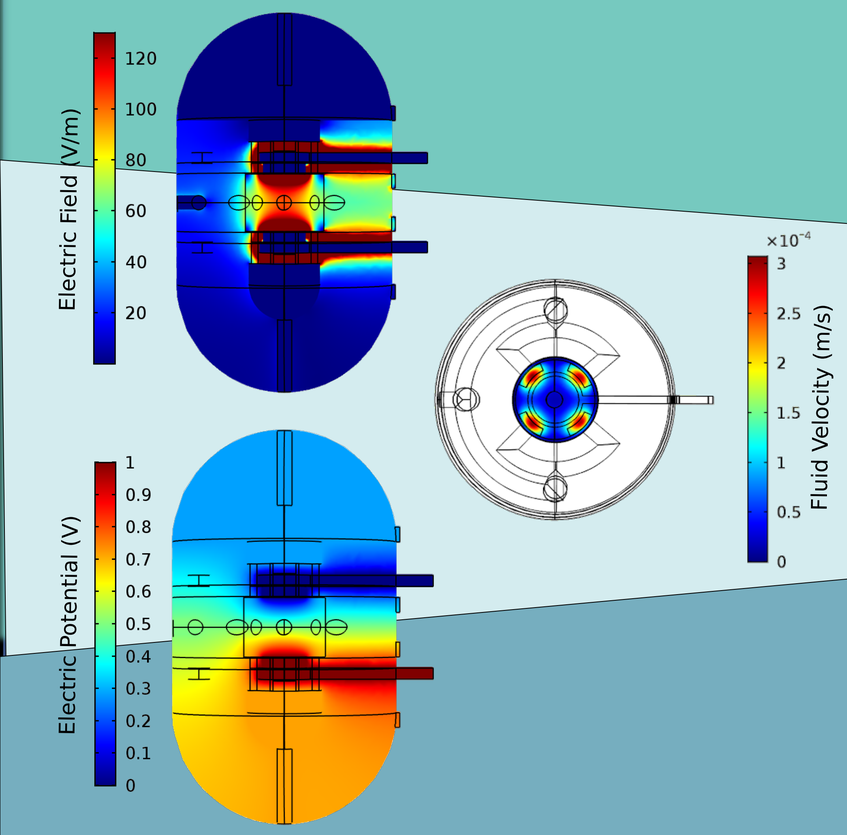
SCAN ME

Published Article



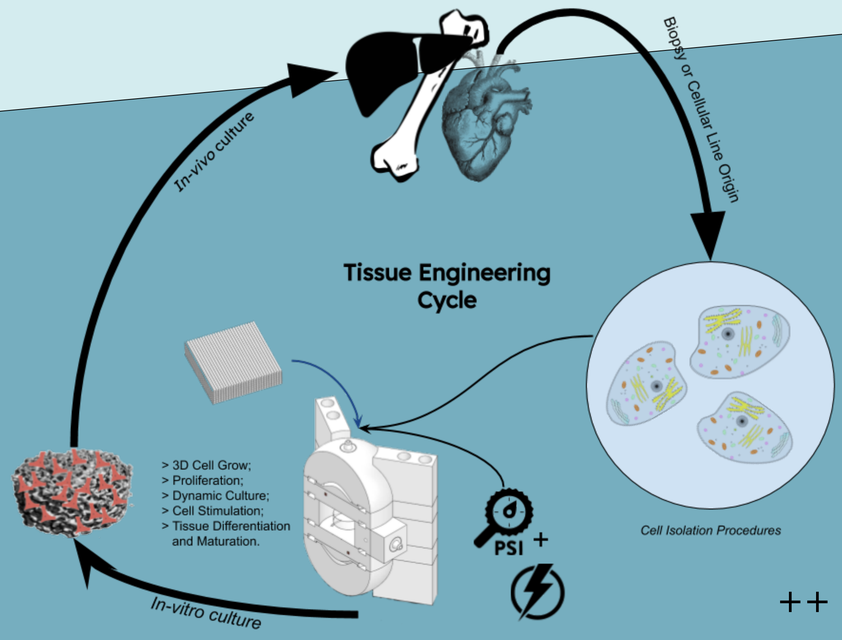
(A) Starting by providing adequate bioreactor conditions for precisely deliver EMS and mechanical stimulations protocols. Allowing to compare the advantages of using each condition according to the different applications that the researcher intends to explore.

WHAT ARE WE DOING? We are developing a costumizable and easily fabricated 3D printed perfusion bioreactor, that will be made available and open source for research purposes.



(B) Improving the understanding of the underlying physics in each experimental setup used. This can be accomplished by taking advantage of electomagnetic and fluid dynamics models of the bioreator for improved knowledge of local conditions generated at the cell culture region-of-interest, for known inputs.

(C) By validating the numerical predictions in *in vitro* studies, retrieving information to improve current EMS delivery models and to fine tune stimulation protocols, that may lead to new discoveries of undercover processes in different cellular lines.



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Funding: This research was funded by the Fundação para a Ciência e a Tecnologia (FCT) and Centro2020 through the following Projects: UIDP/04044/2020, PAMI—ROTEIRO/0328/2013 (No 022158) and Stimuli2BioScaffold—Stimuli modelling for BioScaffolds: from numerical modelling to in vitro tests co-financed by COMPETE2020 under the PT2020 programme, and supported by FCT (02/SAICT/2017).