



Ηράκλειο, 1 Νοεμβρίου 2021

ΑΝΑΚΟΙΝΩΣΗ

Η ΠΑΡΟΥΣΙΑΣΗ ΔΙΠΛΩΜΑΤΙΚΗΣ ΕΡΓΑΣΙΑΣ

Του φοιτητή **Βασίλειου Τσάμπαλλα**, θα γίνει τη

Παρασκευή 5/11/2021 και ώρα **10:00**

στην αίθουσα B2 στο Κτήριο Χημικού

Θέμα Διπλωματικής:

«*Synthesis of carboxylated chitosan derivatives for tissue engineering applications*»

Για την παρακολούθηση της παρουσίασης δια ζώσης, το κοινό θα πρέπει να έχει τα απαραίτητα δικαιολογητικά (πιστοποιητικό εμβολιασμού, νόσησης ή rapid test).

Abstract:

Chitosan, a partially deacetylated derivative of a natural polysaccharide, chitin, is one of the most popular biomaterials, due its excellent biocompatibility, biodegradability and strong antimicrobial properties. However, it has limited solubility at pH values close to neutral pH, because of its very stable crystalline structure arising from strong inter- and intra-molecular hydrogen bonds. The conversion of chitosan into a water-soluble form can be achieved using different methods. One such modification approach, focuses on the addition of carboxymethyl groups onto either its amino ($\text{CH}_2\text{-NH}_2$) or its hydroxyl (3-OH, 6-OH) groups or even onto both of these groups simultaneously. In this bachelor thesis, a series of different carboxylated chitosan derivatives modified either through its amino, hydroxyl or both side-groups, with different degrees of modification were prepared. The synthesized samples were characterized by Fourier-transform infrared (FTIR) and nuclear magnetic resonance (NMR) spectroscopies and by thermogravimetric analysis (TGA). The materials will be employed to investigate the effect of the specific functionalization of the chitosan side-groups on its biological properties in tissue engineering applications.