Ηράκλειο 14 Φεβρουαρίου 2023

ΠΑΡΟΥΣΙΑΣΗ ΔΙΠΛΩΜΑΤΙΚΗΣ ΕΡΓΑΣΙΑΣ

Της φοιτήτριας Σοφίας Παναγιωτίδου θα γίνει την

<u>Τετάρτη 22/02/2023</u> και ώρα **9:30**

στην αίθουσα Α2 (Α115) του Κτιρίου Επιστήμης Υπολογιστών

Διμελή επιτροπή: κα Βερνάρδου Δήμητρα και

κα Βαμβακάκη Μαρία

Θέμα Διπλωματικής:

«*Evaluation of Hybrid Materials based on α-Fe_2O_3 and Oxidized Dextran as Anodes in Aqueous Li^+, Zn^{2+}, Al^{3+} Electrolytes*»

Abstract:

The application of new hybrid materials in energy systems has seen a significant development. However, their electrochemical performance still needs to be further improved, which is mainly dependent on the electrodes and electrolyte. The main challenges of organic and inorganic electrode materials for metal ion batteries mainly include high solubility in the electrolyte, low intrinsic electronic conductivity and large volume variation during cycling. Thus, this work is focused on the design and synthesis of suitable materials based on natural polymer-inorganic hybrids as anodes with improved electrochemical properties such as good cycling stability, structural design flexibility and environmental friendliness. These materials combine the elasticity and functionality of the polymer, with the high thermal and chemical stability of the inorganic component. In addition, attention is given on the understanding of the ion diffusion mechanism in the hybrid material lattice through cyclic voltammetry measurements utilizing Li^+, Zn^{2+} and Al^{3+} aqueous electrolytes.