



Ηράκλειο, 14/10/2021

## **ΑΝΑΚΟΙΝΩΣΗ**

### **Η ΠΑΡΟΥΣΙΑΣΗ ΔΙΠΛΩΜΑΤΙΚΗΣ ΕΡΓΑΣΙΑΣ**

Της φοιτήτριας **Ελένης Μακροπούλου**, θα γίνει την

**Πέμπτη 21/10/2021** και ώρα **12:00**

στην αίθουσα A210 του Κτιρίου Μαθηματικού

**Θέμα Διπλωματικής:**

**« Synthesis & Characterization of Blue-light emitting  
layered hybrid lead bromide perovskites »**

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

#### **Abstract:**

A Diploma Thesis presented on the study of the structural diversity and PL emission of hybrid layered lead halide perovskites with the variety of organic spacers. Halide perovskites are remarkable semiconductors as they have high optical absorption coefficients, long charge carrier diffusion lengths, intense photoluminescence, and slow rates of non-radiative charge recombination. Layered hybrid halide perovskites ( $A_2B''X_4$  or  $A''B''X_4$  (A=monovalent or bivalent cation), B=bivalent p-block metal, Pb, Sn or Ge), X=halide anion, Cl, Br or I), consist of anionic sheets of corner-sharing metal-halide octahedral, selectively "partitioned" by organic cations to form crystallographically ordered nanoscale sheets. This arrangement generates natural multiple quantum wells that exhibit stable excitonic features with intense photoluminescence (PL) characteristics, even at room temperature. Some of the materials exhibit unusual optical emission, since they can generate white light as a result of the self-trapped exciton mechanism.  $A_2PbBr_4$  compounds have been crystallographically and spectroscopically characterized revealing high phase purity and an intense PL emission.

This work is focusing on the study of the structural diversity and PL emission of hybrid layered lead bromide perovskites with the variety of organic spacers.