



Univerza v Ljubljani, Fakulteta za elektrotehniko  
**Katedra za elektroniko**

Vas vljudno vabi na predavanje

z naslovom:

**Electrons, holes and midions**

Predaval bo:

**Antonio Martí**

**(Universidad Politécnica de Madrid, Španija)**

Predavanje bo:

**petek, 26.10.2018 ob 10:30  
v multimedijski dvorani (MMD)**

**Vljudno vabljeni!**

**POVZETEK:**

Conventional semiconductors are characterized by a conduction band and a valence band split by the semiconductor gap. Electrons are the carriers in the conduction band while holes are the carriers in the valence band. However, there is also the possibility for semiconductors with two gaps to exist. An example of these are the intermediate band materials proposed for solar cell applications. These two-gap semiconductors are also characterized by a conduction band (with electrons), a valence band (with holes) and additional “intermediate” band whose carriers can behave as electrons or holes and that we designate as “midions”. In this talk we stimulate the audience discussing about some of the possibilities that these two-gap semiconductors might offer to the field of optoelectronics. Given the experience of the speaker in intermediate band solar cells, we will also take the opportunity to briefly summarize the status of the research in this particular field.

**BIOGRAFIJA PREDAVATELJA:**

Prof. Antonio Martí graduated in Physics in 1987 by the Universidad Complutense de Madrid and doctorated in 1992 by the Universidad Politécnica de Madrid (UPM). He joined the Instituto de Energía Solar (IES) of the UPM in 1986. Together with Prof. Luque, he proposed in 1997 the intermediate band

solar cell (IBSC) concept and its practical implementation with quantum dots among other options. Within IES, he has directed the creation of IBLAB, a laboratory specialized in the characterization of intermediate band solar cells that was the first Laboratory in providing experimental proof of the operation of the IBSC concept accordingly to its postulates. Currently he is the Director of the Silicon and New Concepts for Solar Cells at IES.