



## AVVISO DI SEMINARIO

### PER CHIAMATA RICERCATORE A TEMPO DETERMINATO Tip. A

Il Direttore informa che con decreto direttoriale n. 13/2023 del 2.2.2023, sono stati approvati gli atti del concorso per il reclutamento di un ricercatore a tempo determinato di Tipologia A ai sensi del previgente art. 24, comma 3, lett. A, Legge 240/2010 per il settore concorsuale 02/B1 - SSD FIS/01, per la quale è risultato vincitore il **Dott. Marco SALERNO**.

Come previsto dal regolamento e dal bando concorsuale, il Dott. Marco SALERNO terrà il seminario dal titolo

### “NANOPATTERNING BY ANODIZATION: PRINCIPLES AND APPLICATIONS”

il giorno **10 febbraio 2023** alle ore **11.30**

in Aula Seminari (Palazzina RM004) – Via Antonio Scarpa 16

#### **Abstract:**

Traditional nanofabrication techniques such as EBL allow for perfect control of size and spacing of nanoscale features yet require expensive facilities and long-lasting processes in highly controlled environment. Conversely, the so-called natural lithographies provide lesser control on size yet allow for patterning by inexpensive means. We present anodization as a means to fabricate nanopores in surface oxide coating of metals. This treatment is based on self-organization during oxide growth and is easily applicable to large areas. To date, the most successful applications are as substrates for SERS (after overcoating/decorating with gold) and for controlled living cell cultures. When combined with substrates of technological interest (wafers of silicon or glass) and/or applied to materials used in photonics/optoelectronics, additional uses can be devised in sensors or - generally speaking - in fabrication of a variety of smart materials for eg photonic crystals or solar cells. In fact, multiple anodizations of different metal layers may notably result into overall coatings with modulated electrical and optical properties. Some results are presented, mainly in aluminum, partly on titanium, and finally in niobium and tantalum for demonstration of multilayer capabilities of this approach.

Roma, 6 febbraio 2023