



**UNIONE EUROPEA**  
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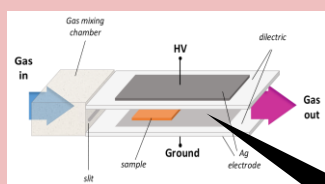


**Ph.D in Chemical and Molecular Sciences – XXXII CYCLE**

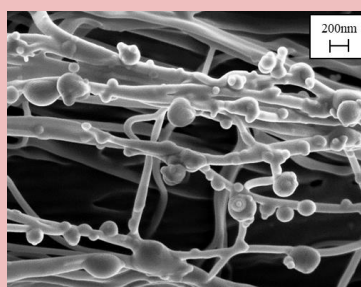
# ***Plasma processes for improving performances of biological tissue substitutes in Regenerative Medicine***

## **AIM OF THE RESEARCH PROJECT**

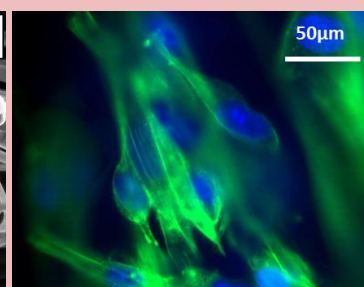
Development of new products for Tissue Engineering and Regenerative Medicine by deposition of bio-composite coatings on decellularized tissues through an Aerosol-Assisted Atmospheric Pressure Plasma (AA-APP) process [1].



*Dielectric Barrier Discharge Reactor*



*SEM image of coatings plasma deposited on decellularized tissue.*



*Fluorescence image of cells on decellularized tissue.*

[1] F. Palumbo, A. Treglia et al.; Plasma-Deposited Nanocapsules Containing Coatings for Drug Delivery Applications; ACS Appl. Mater. Interfaces, 2018



### **INDUSTRIAL PARTNER**

TissueGraft company develops innovative biological matrices for research applications as models for soft tissue Regenerative Medicine.

*Within the PhD project they will provide the biological tissue substitutes.*

Ph.D. Student: **Dr. Annalisa Treglia**

Supervisor: **Prof. Pietro Favia**



### **INTERNATIONAL PARTNER**

The Laboratory for Biomaterials and Bioengineering (LBB) of Laval University provides scientific research in bioengineering and biomaterials.

*Within the PhD project they will collaborate in the characterization of plasma-treated substitutes.*

Industrial Partner Supervisor: **Dr. Luca Fusaro**

International Partner Supervisor: **Prof. Diego Mantovani**



**Dipartimento di Chimica**