



CENTER FOR RESEARCH AND DEVELOPMENT OF FUNCTIONAL MATERIALS

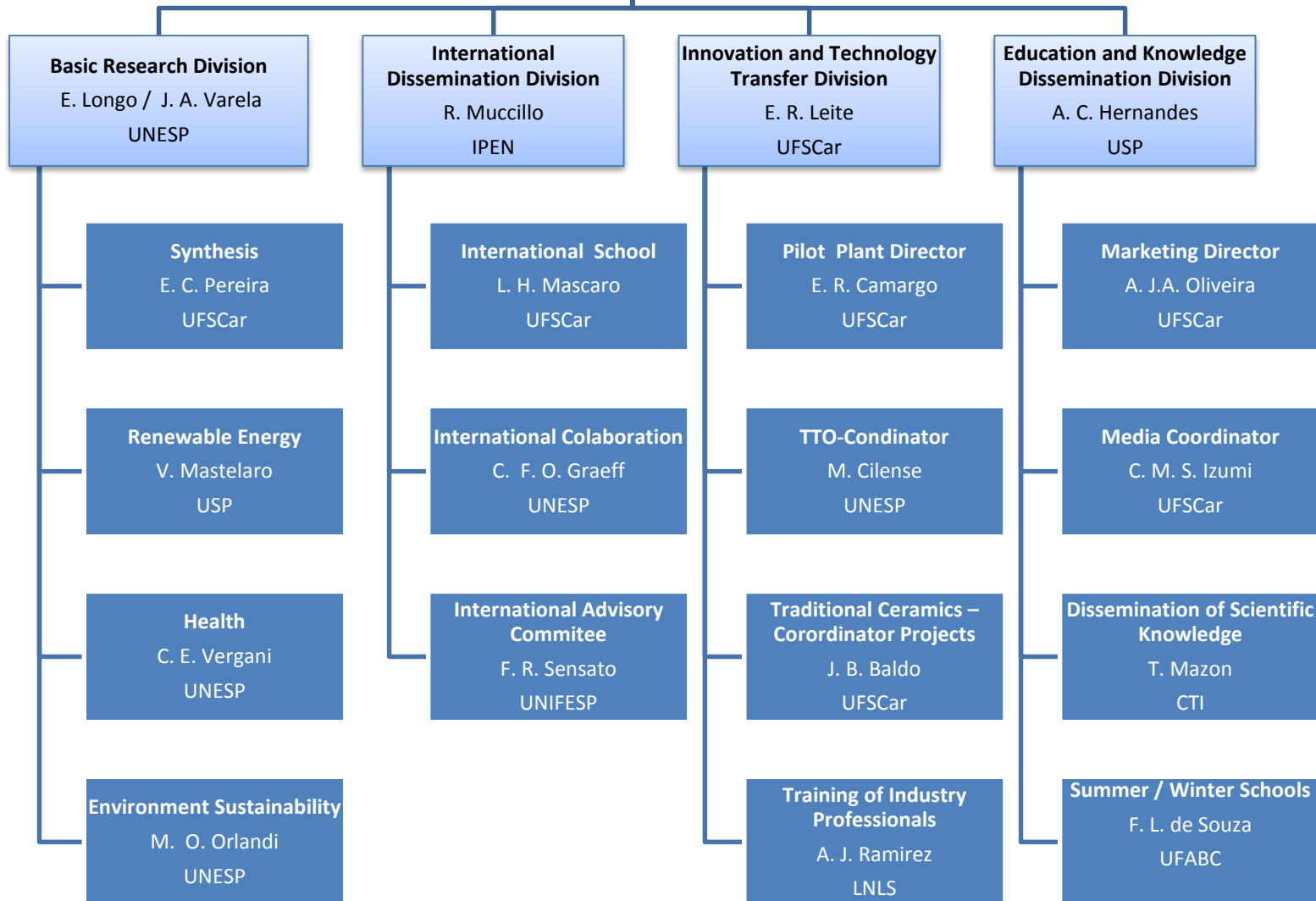
CEPID – Research, Innovation and Dissemination Center
FAPESP – São Paulo Research Foundation



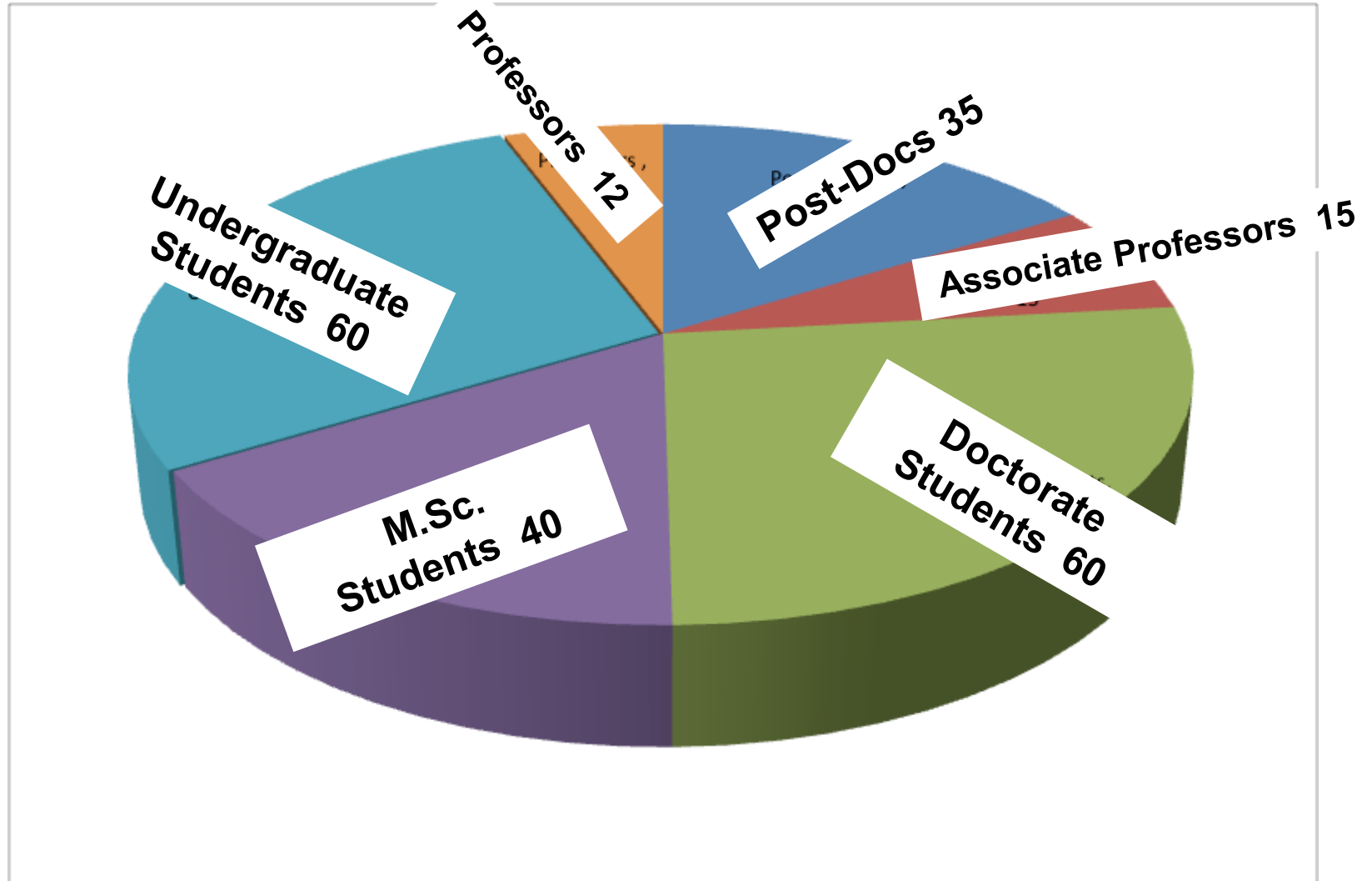
Presentation of the M-ERA.NET Call For Proposals
16/04/2015 - FAPESP - São Paulo

Executive Director
E. Longo - UNESP

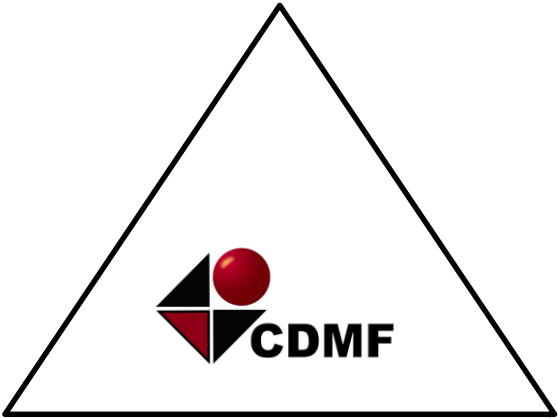
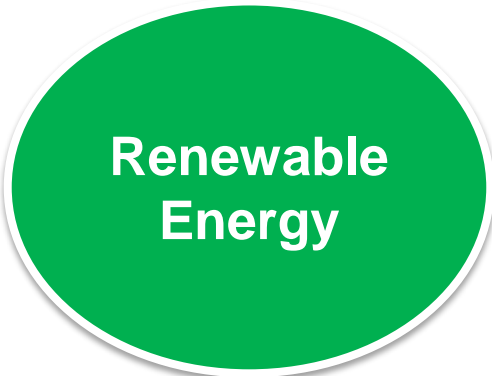
Deputy Director
J. A. Varela - UNESP



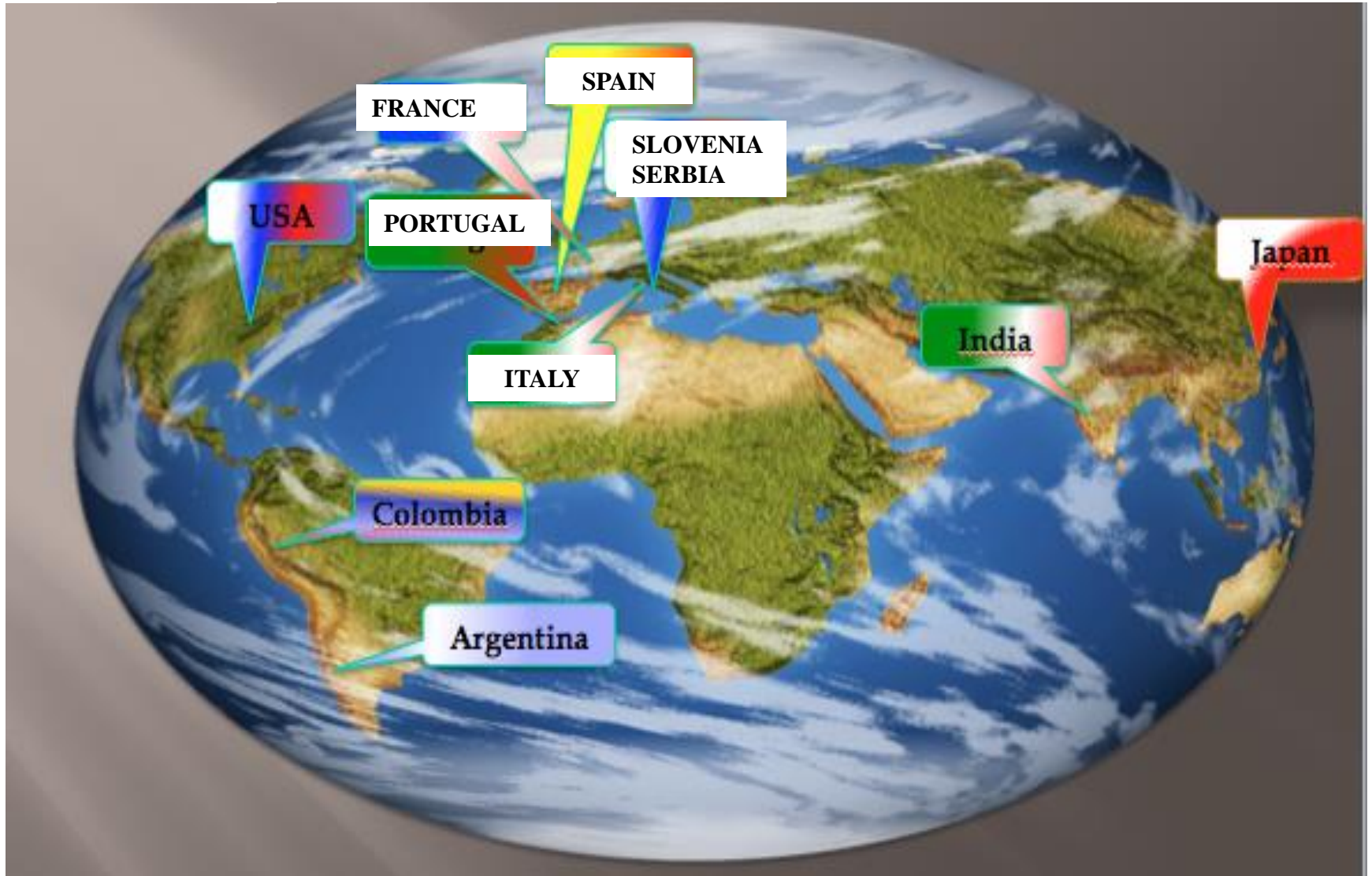
Composition



Materials for



International cooperation programs



England

- ***New Castle University***
- ***Dept. Math. Model., Statistics and Bioinformatics, Ghent***

France

- ***Aix Marseille Université, CNRS IM2NP, Marseille***
- ***Institut des Sciences Chimiques de Rennes, Université de Rennes 1***

Portugal

- ***University of Aveiro***

Spain

- ***Universitat Jaume I, Departamento de Ciencias Experimentales***
- ***Physical Chemistry Department, University of Sevilla***

Germany

Christian-Albrechts-University of Kiel

unesp 

ufscar 

USP




UFABC


ipen

 **FAPESP**

M-ERA.NET 2015 call for proposals

Funding is offered to innovative projects focusing on:

1- Integrated Computational Materials Engineering

2- New Surfaces and Coatings

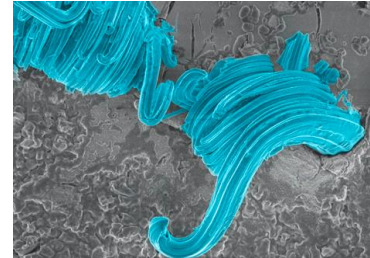
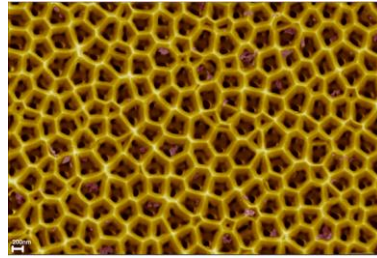
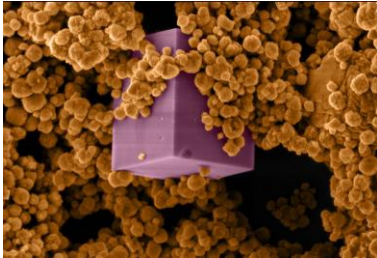
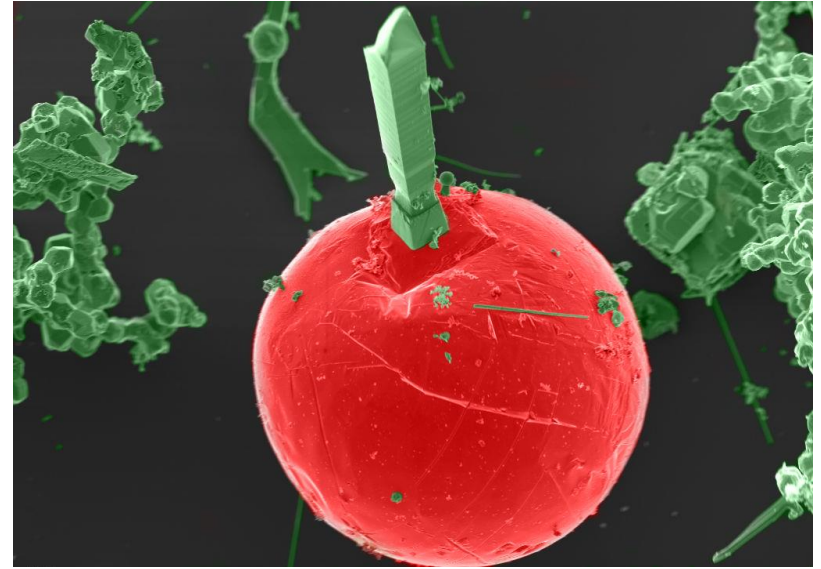
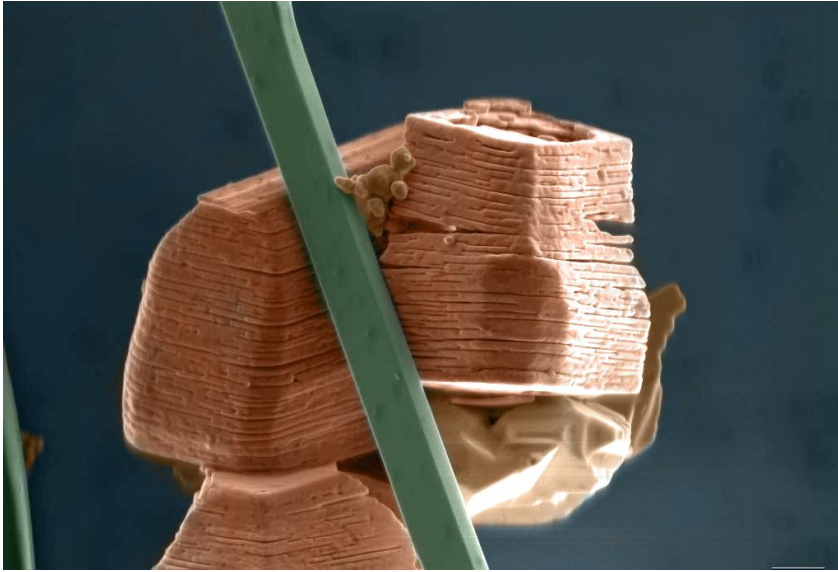
3- High performance synthetic and biobased composites

4- Materials for Sustainable and Affordable Low Carbon Energy Technologies

5- Tailoring of bioactive material surfaces for health applications

6- Materials for Additive Manufacturing

Nano-Art



Transforming HR-SEM image in Art



Internet Games

www.ludoeducativo.com.br



Centro Multidisciplinar para o Desenvolvimento de Materiais Cerâmicos



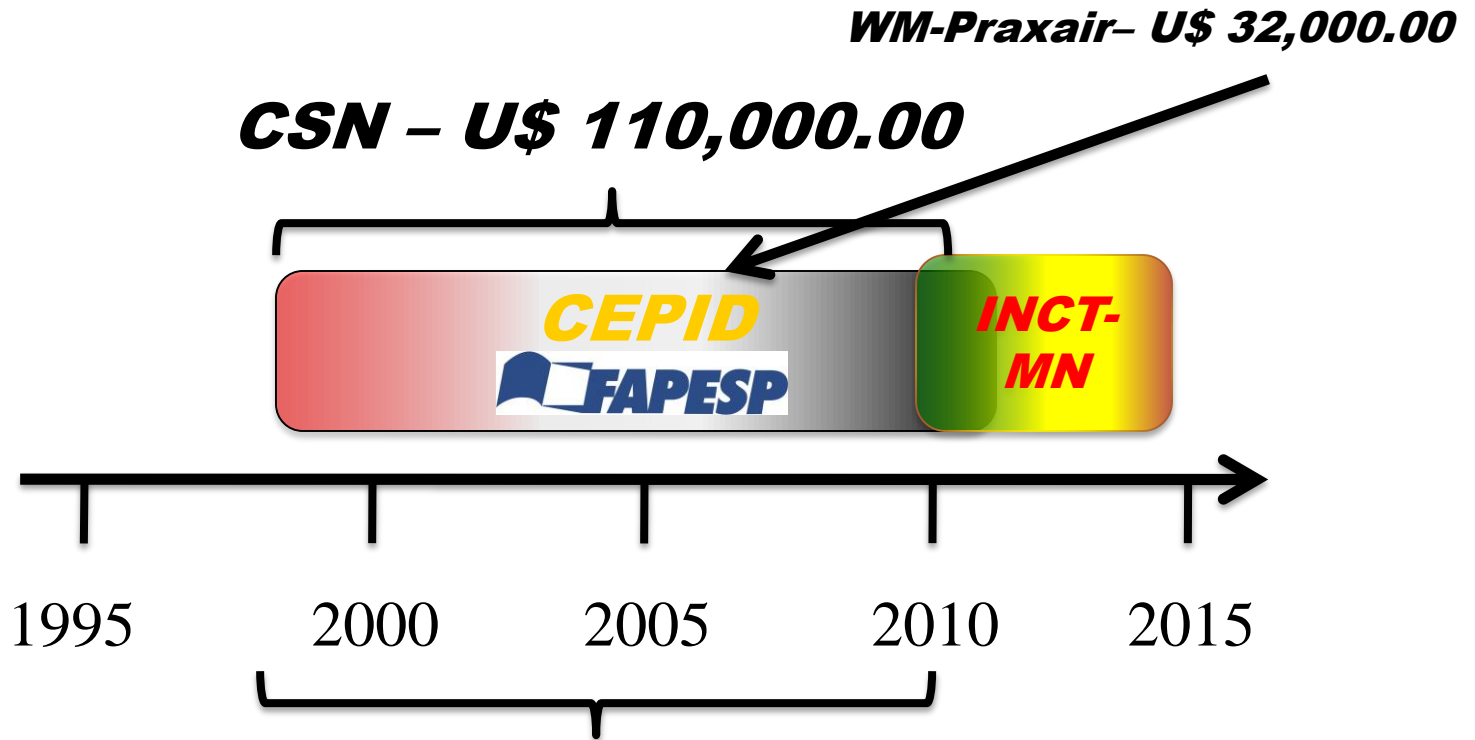
Email: Química Jogar



Continuing Education and Dissemination Program



Time-Evolution



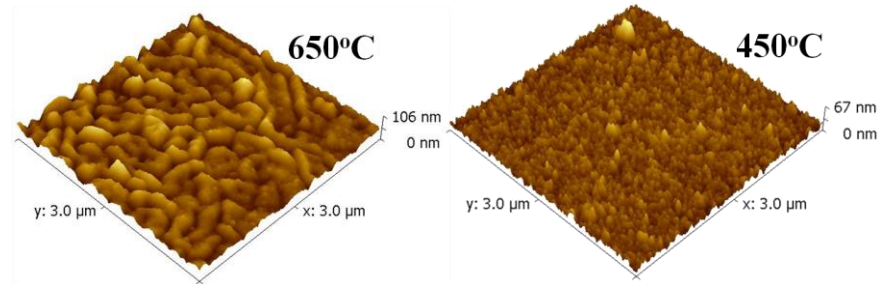
17 Patents (1-USPTO; 1 WP)
>860 Articles (ISI)
>6000 citations (ISI)



Dra. Valerie Bouquet

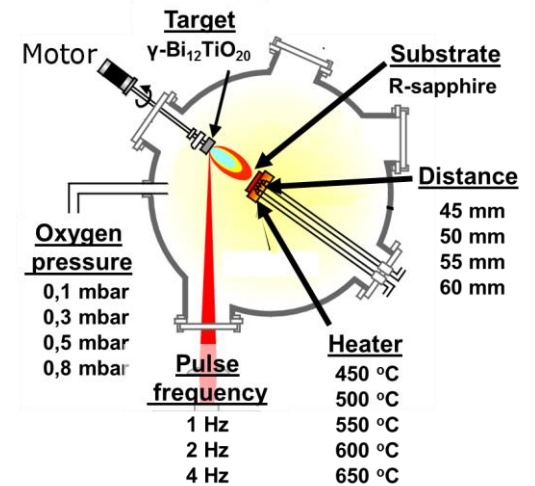
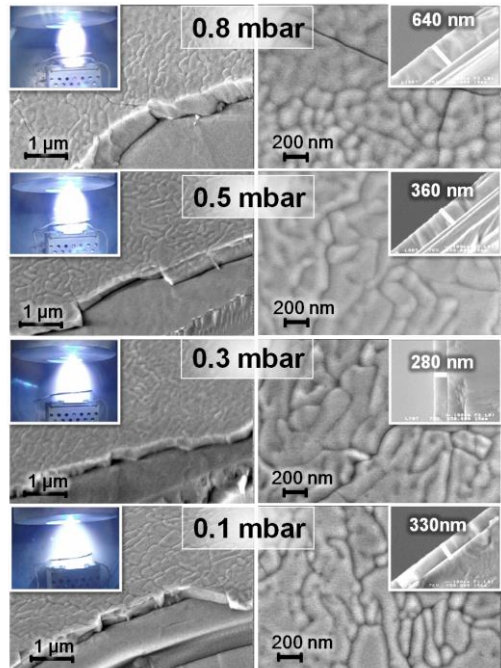
PLD-Pulsed Laser Deposition

Thin films of bismut titanate - $\delta\text{-Bi}_{12}\text{TiO}_{20}$



Controlling the film
 growth mechanismo to
 to obtain stable or
 metastable phases

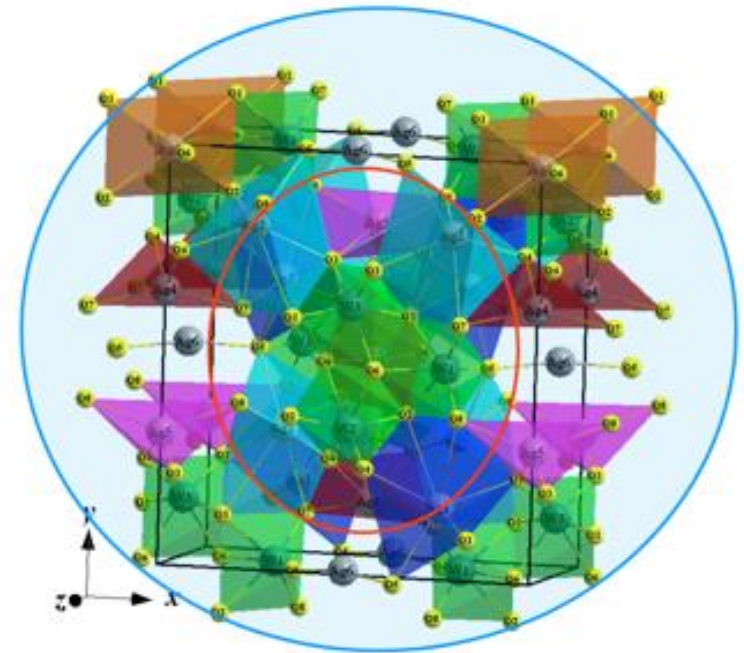
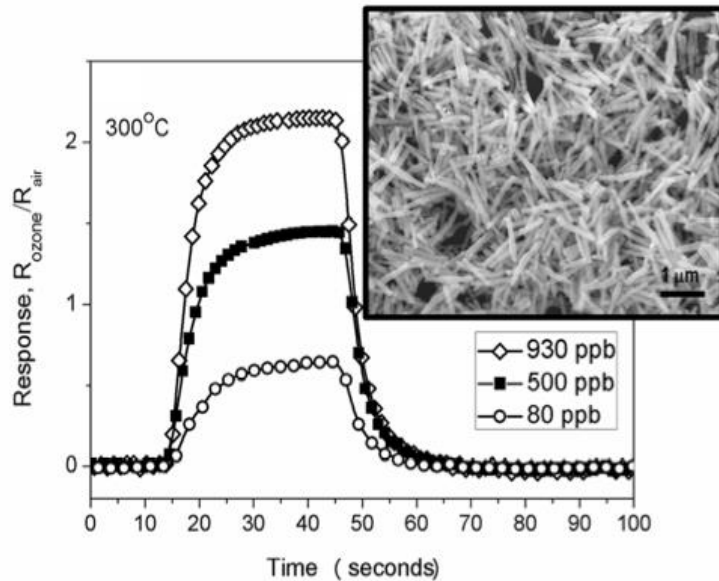
Photocatalyst
 Water spliting.



France, Aix Marseille Université, CNRS IM2NP, Marseille

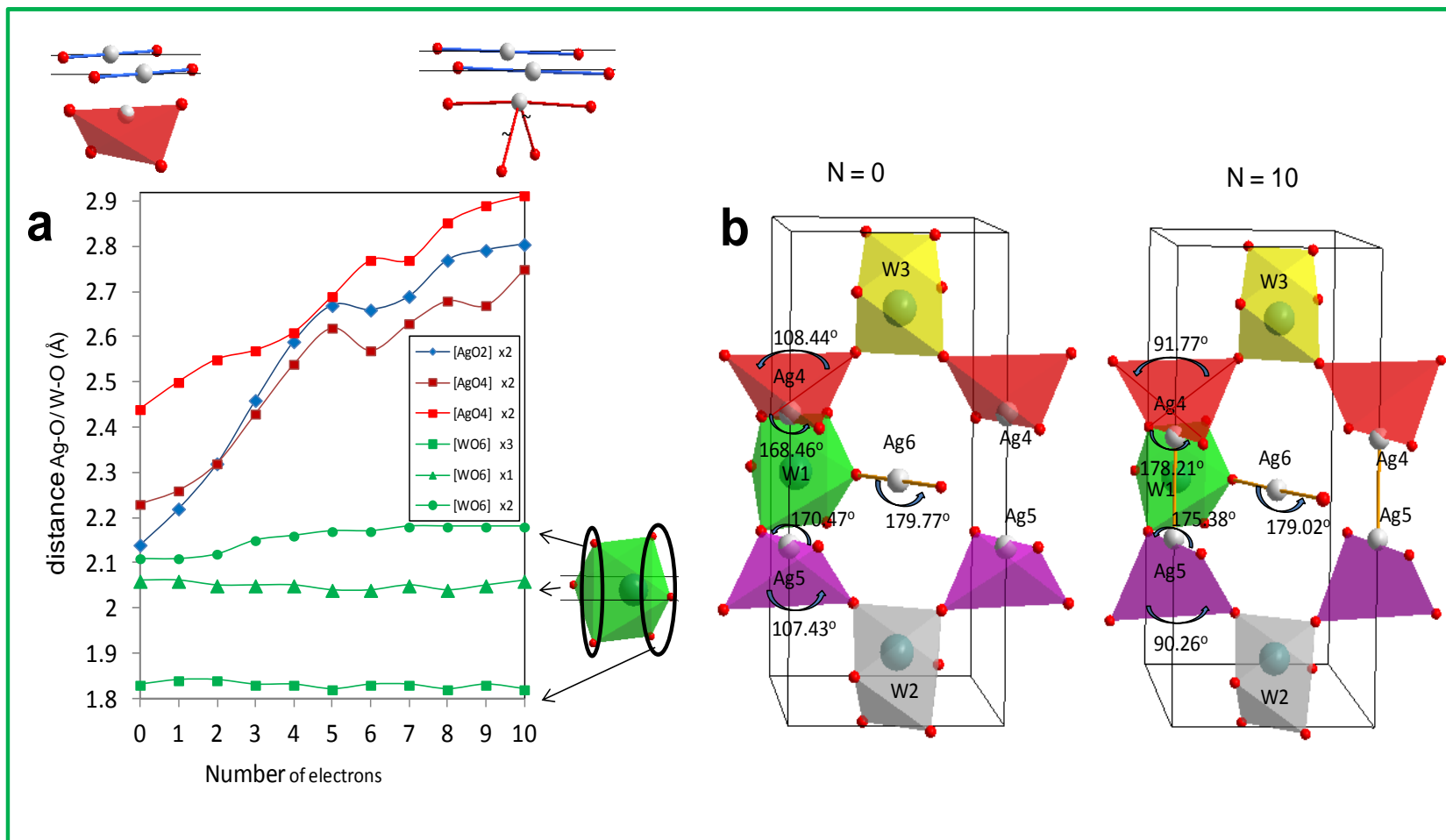
Dr. Khalifa Aguir

Sensor – O₃



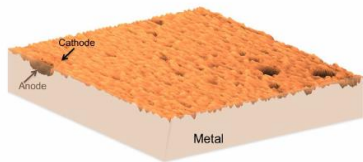
α -Ag₂WO₄

Dr. Miguel A. San-Miguel

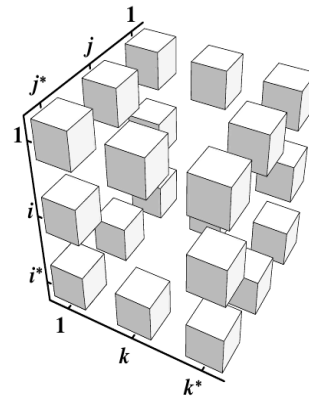


Dr. Bernard De Baets

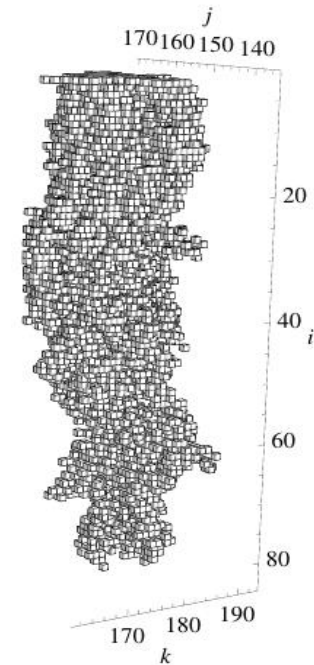
Celular Automata to simulate pitting corrosion



Sample



Representation



(a)

Celular automata simulation
of pit formation

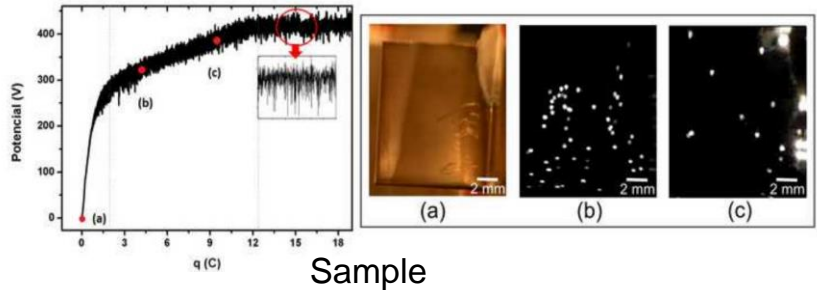
Germany, Christian-Albrechts-University of Kiel



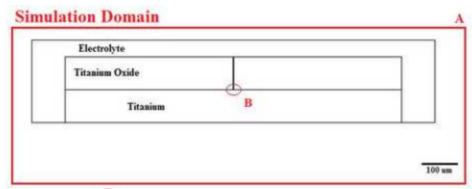
Dr. Helmut Foll

Dr. J. Carstensen

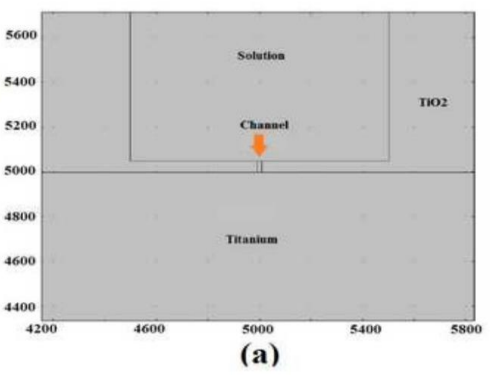
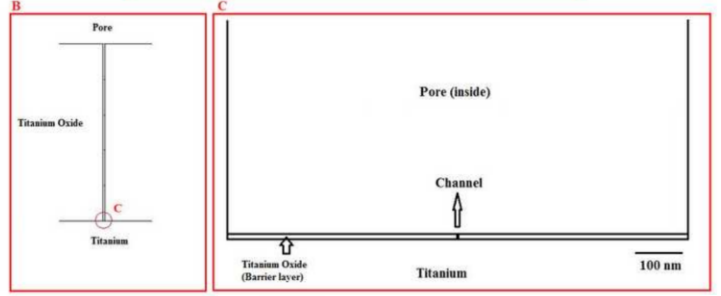
Phase transformation in anodic TiO₂ simulated by FEM



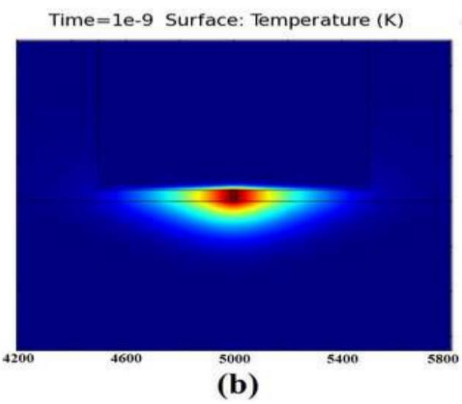
Sample



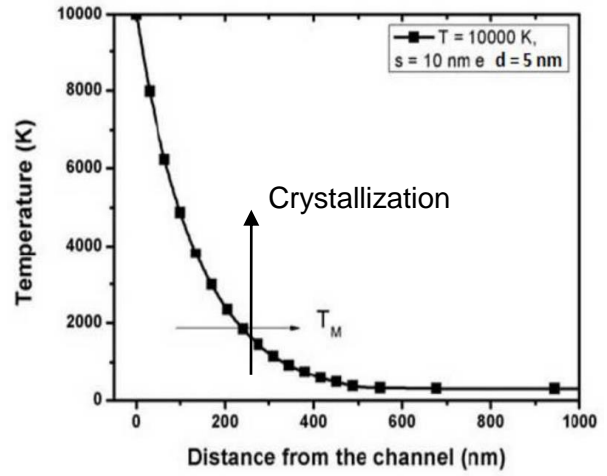
Model



(a)



(b)

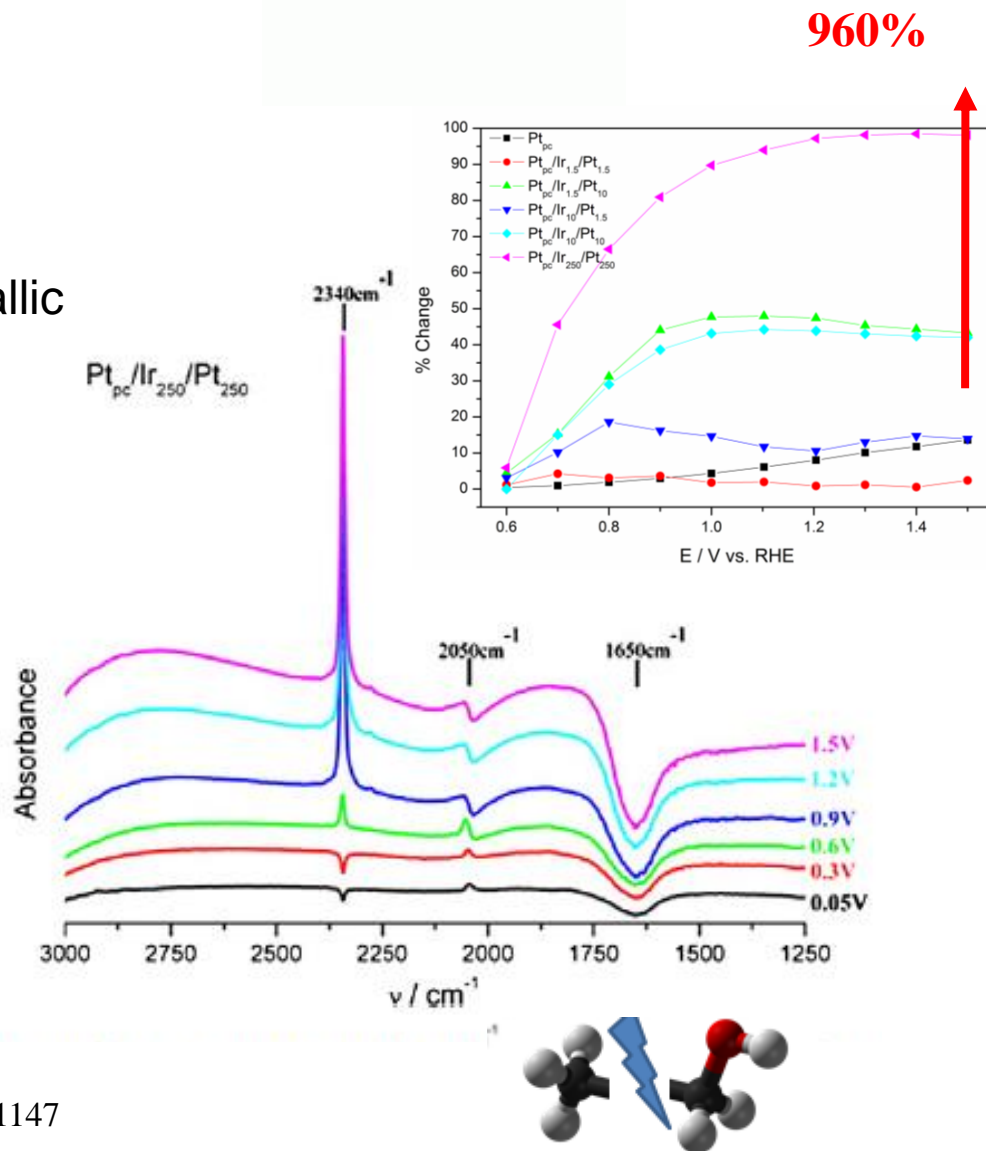
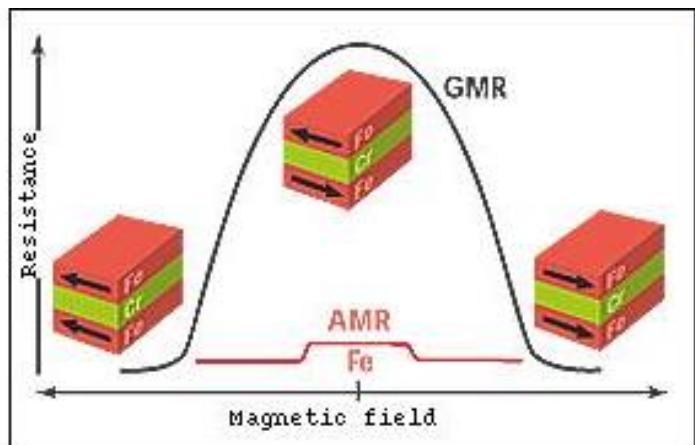


England, New Castle University,
New Castle Upon Tyne



Dr. P. Christensen

Complete oxidation of Ethanol over Metallic multilayers

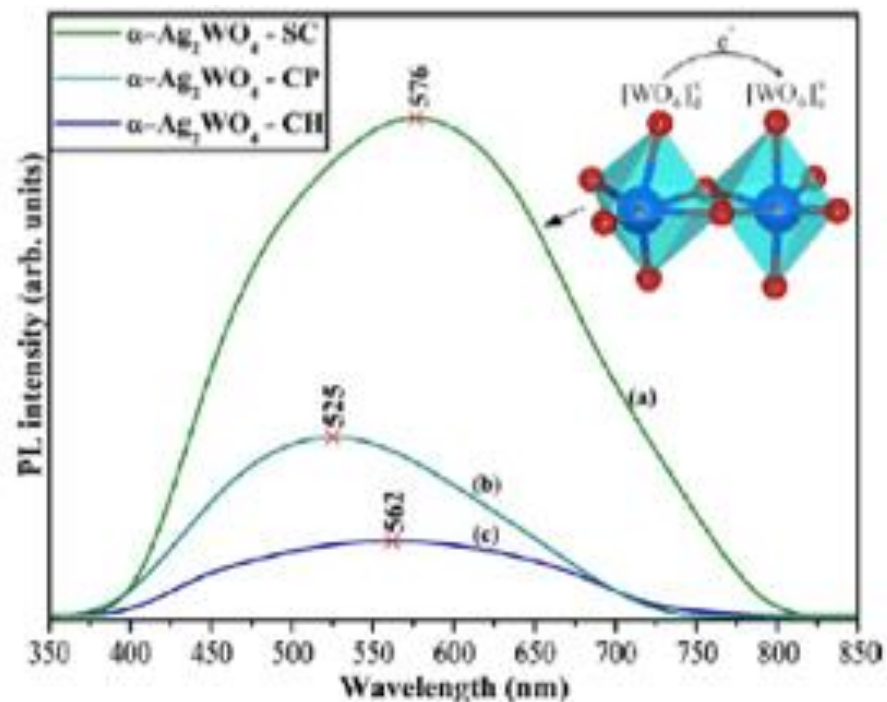
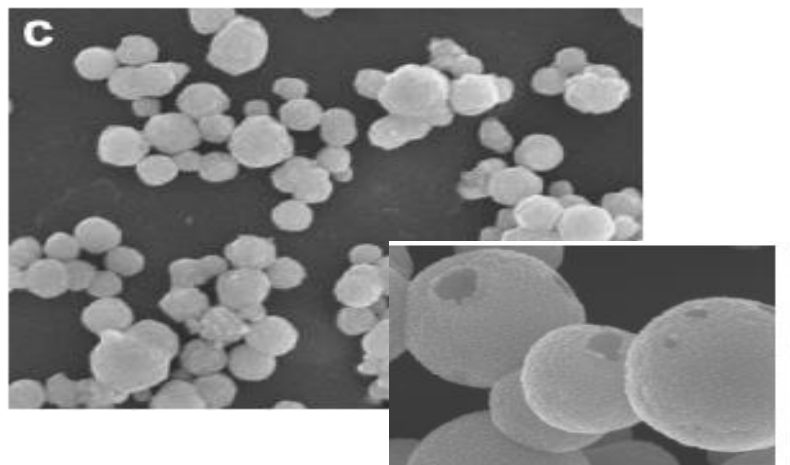
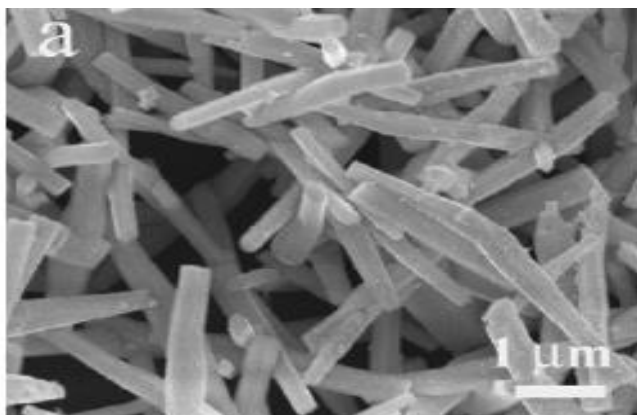


France, Institut des Sciences Chimiques de Rennes,
Université de Rennes 1

Dr. A. Perrin

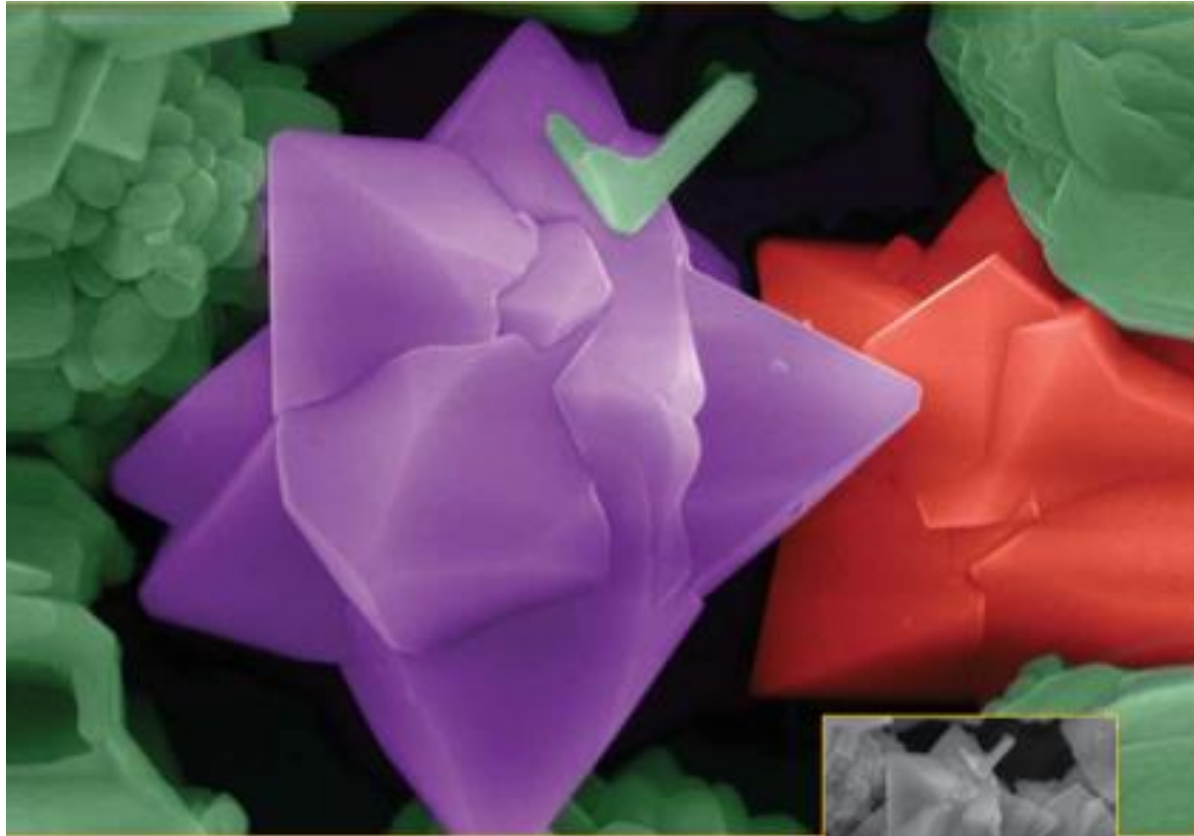
Dra. C. Perrin

Ag_2WO_4 - Ag_2MoO_4 Core-shell



Dr. Eric Croiset

Ag_2WO_4 - TiO_2 Core-shell

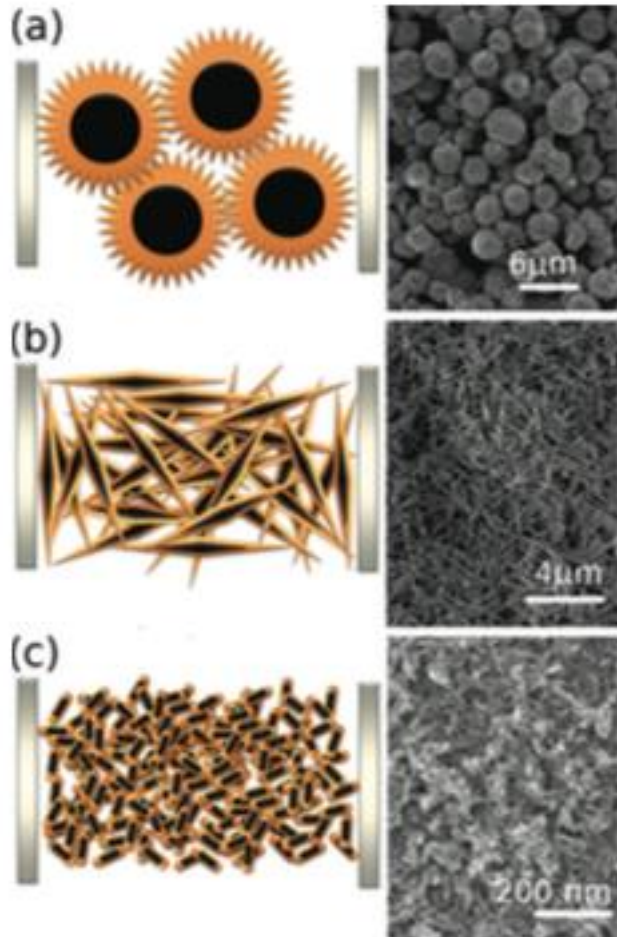


(29) Pedra
Ametista (Óxido
de Titânio)

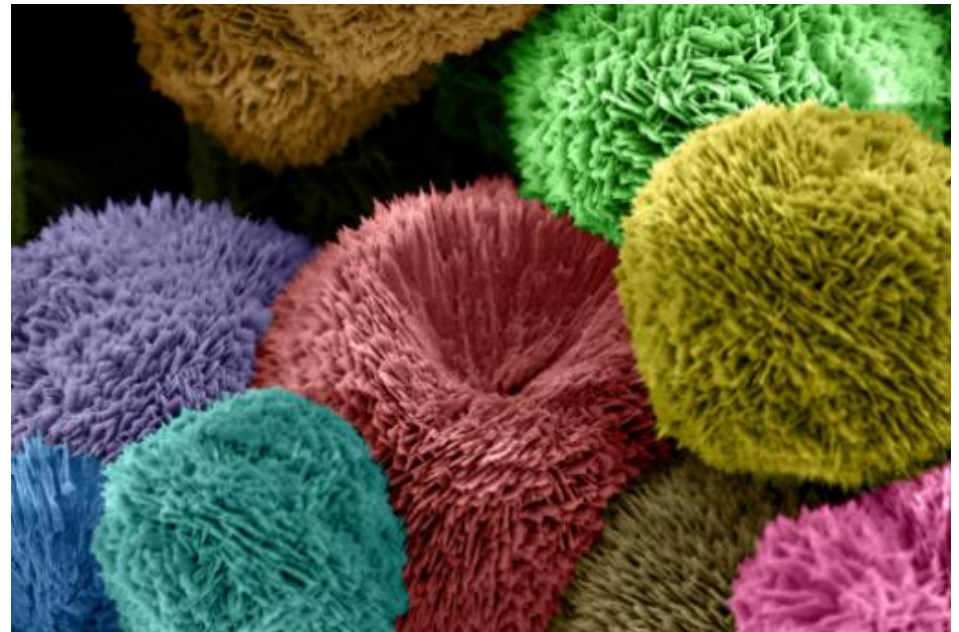


USA - MIT, Dept Mat Sci & Engn, Cambridge

Dr. Tuller, Harry L.



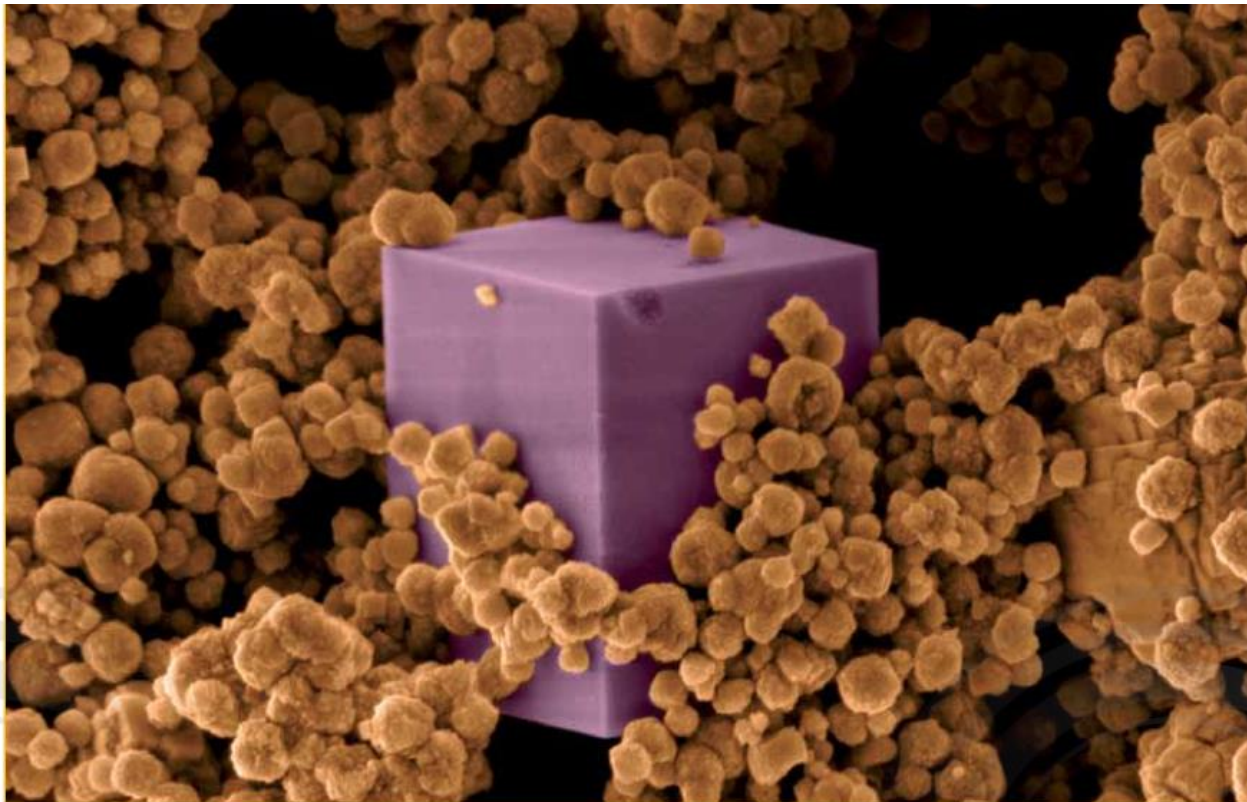
Sensor – CuO – H₂



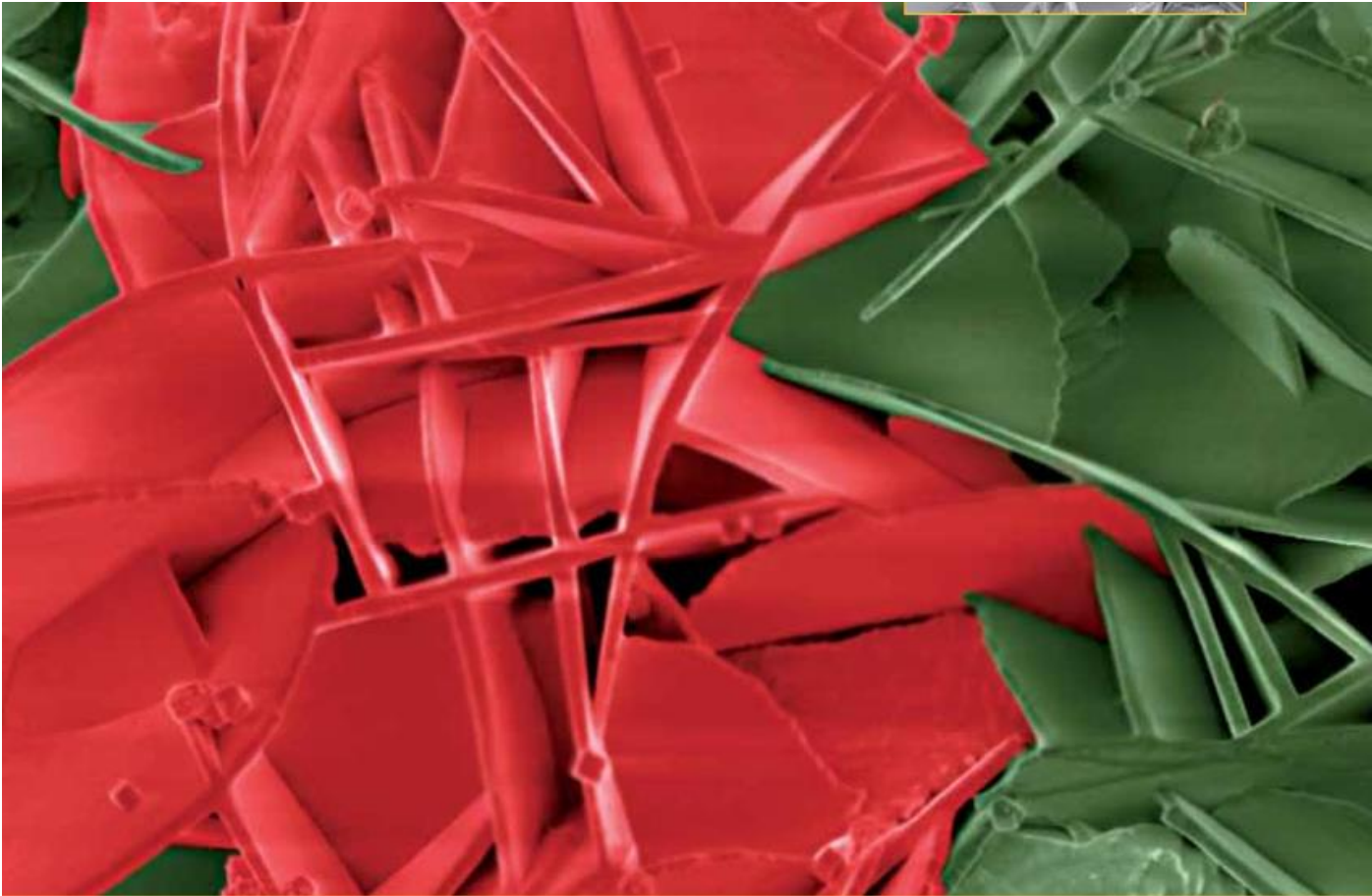
Portugal, University of Aveiro
Dr. P. Villarinho

Portugal, University of Minho
Dr. R. Oliveira

Nanotechnology



Semiconductor



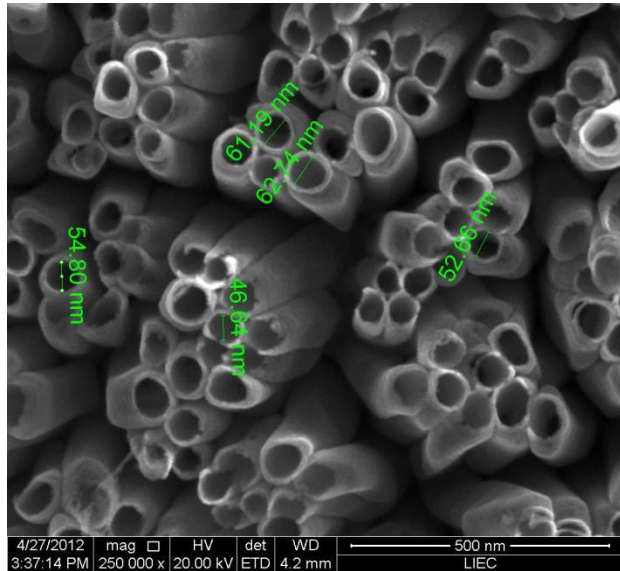
Colombia, Universidade de Bogotá

Dr. Oscar Arturo G. Rojas

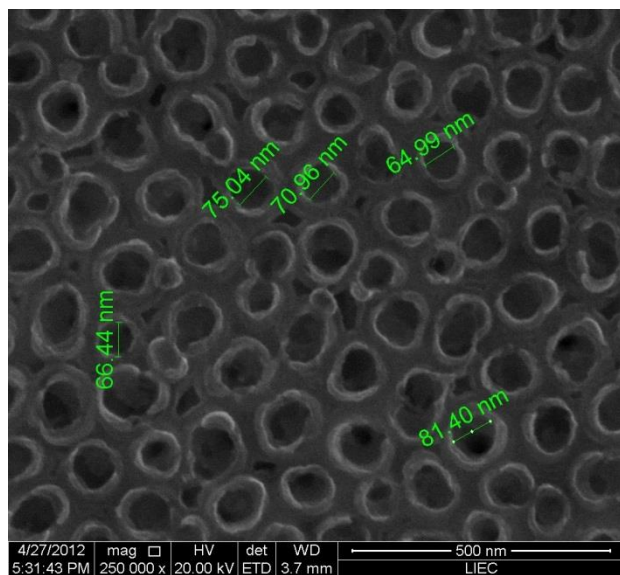
Argentina, Universidade Mar del Plata

Dra. Mirian Castro

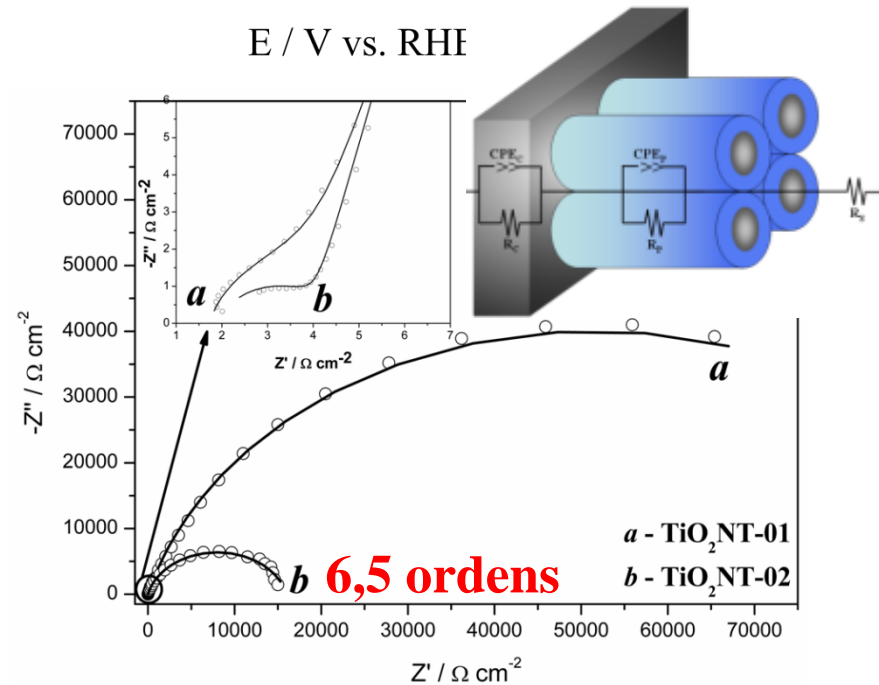
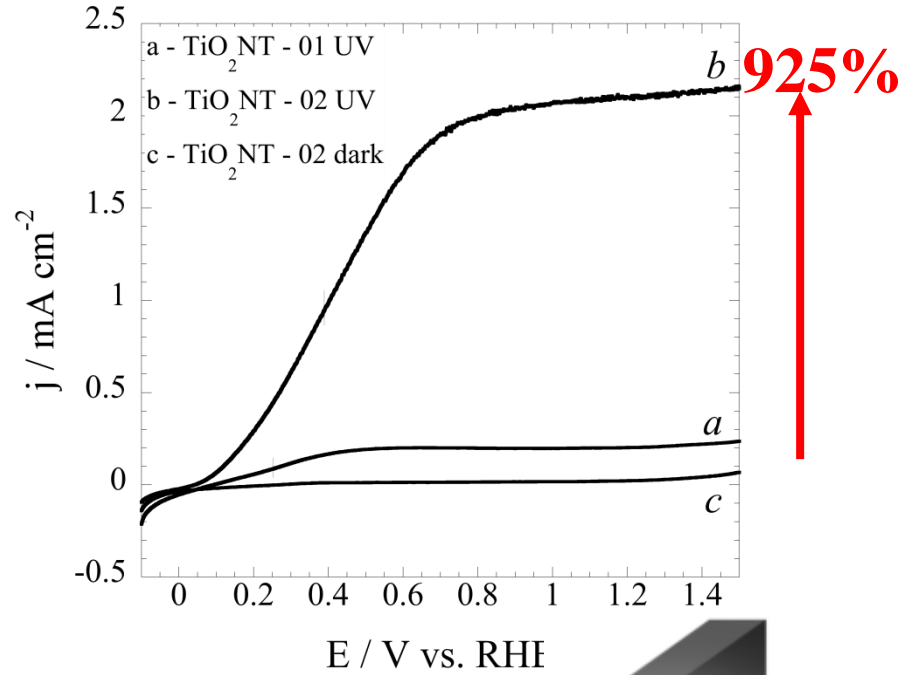
TiO₂NT – Water Splitting



U=80V
T=10°C
LI + EG



U=80V
T=20°C
LI + EG



TiO₂NT – Baterias íon-Li⁺

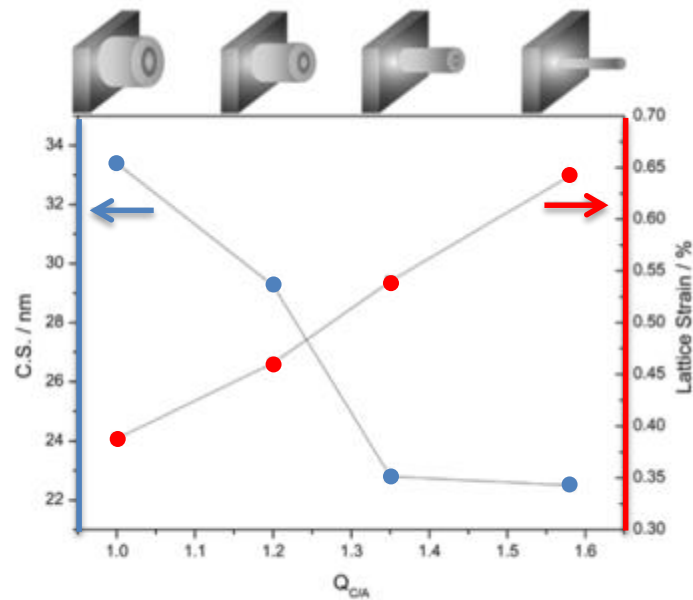
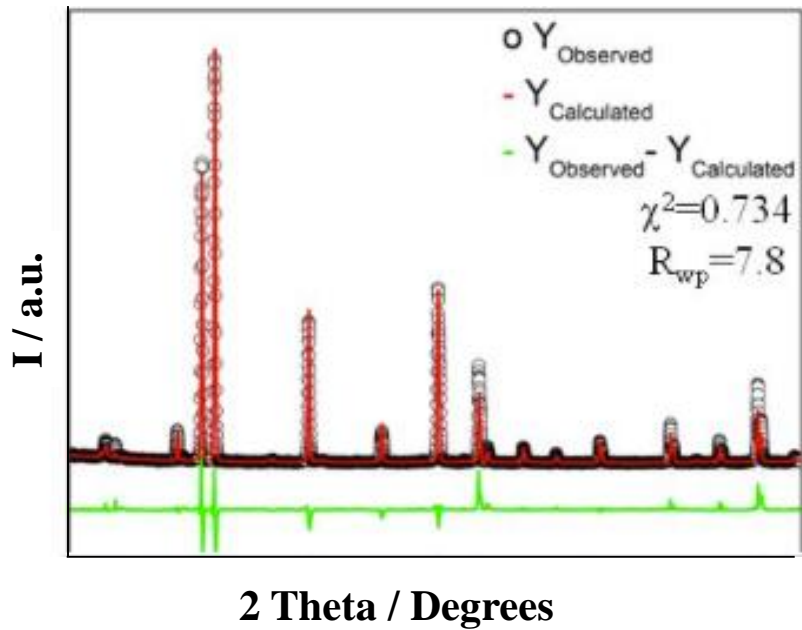
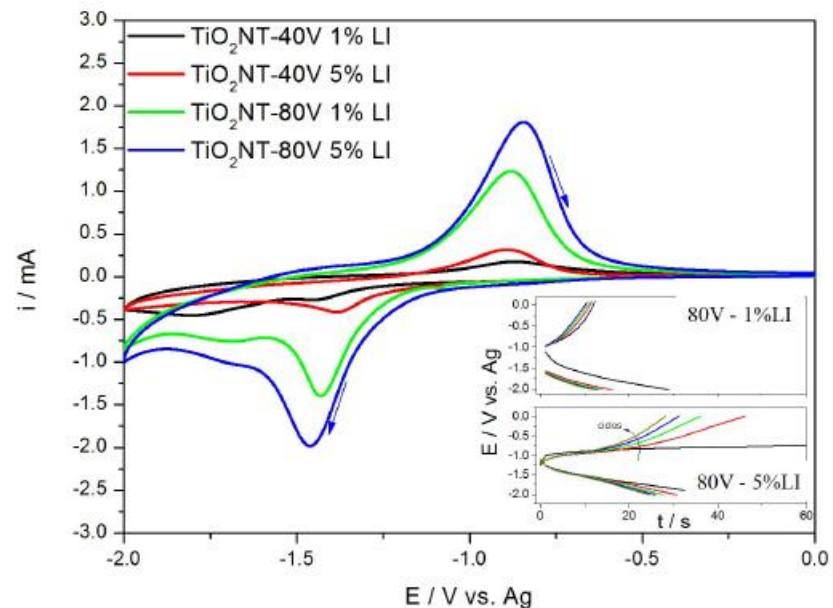
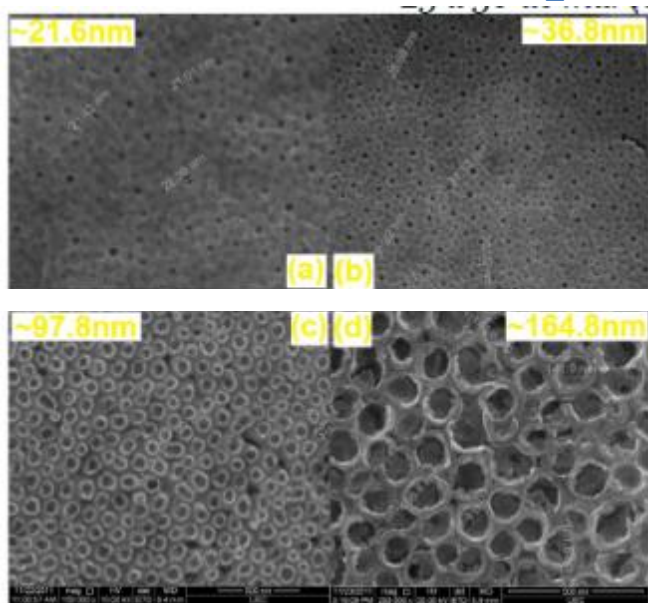
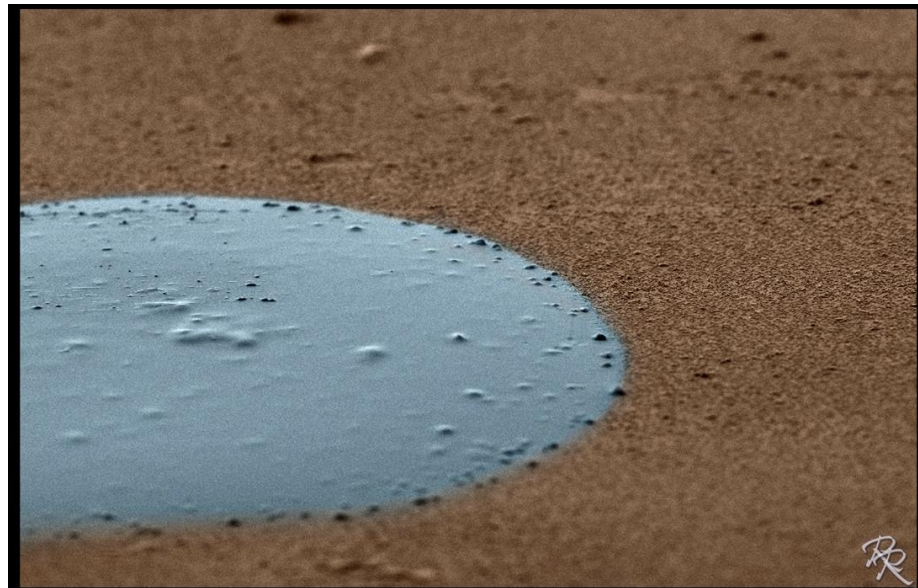


Fig. 4. Crystalline size and lattice strain relation for different Li-ion insertion/extraction in TiO₂NTs.

antibacterial

fungicide

sensor



TiO_2

