



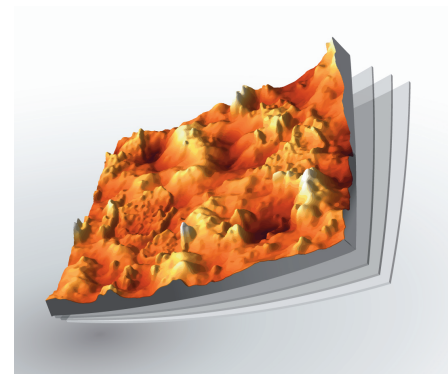
**Area of Impact: Materials for new technologies**

**Specialty: Nanotechnology**

The main goal of our Millennium team in Multifunctional Materials for Applied Surface Science -MultiMat- is to nucleate a center of excellence in the field of nanostructured surface systems (NSS) with expertise in their modelling, growth and characterization, with primary research focus on lithium-ion batteries (LiB), a topic with a strong impact in energy and environment in Chile and worldwide relevance.

The phenomena occurring in LiB are complex and require the transdisciplinary efforts of many skilled scientist. This is the case of the MultiMat team with expertise in the growth, characterization and modeling of NSS systems.

Considering that NSS and LiB are high-cost research fields and advanced experimental facilities are mainly centralized in Santiago, the MultiMat alliance will allow sharing lab capabilities among scientists both located in Santiago and Regions, narrowing the infrastructure gap existing in our Country for the development of Nanotechnology.



MAIN ACHIEVEMENTS

This Millennium Nucleus was recently awarded.  
Soon we will highlight the achievements obtained by its researchers.

CONTACT INFORMATION

DIRECTOR: **Judit Lisoni**  
ACTING DIRECTOR: **Francisco Gracia**



Judit Lisoni



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MILLENNIUM NUCLEUS  
**MULTIMAT**  
MULTIFUNCTIONAL MATERIALS FOR  
APPLIED SURFACE SCIENCE

## MILLENNIUM NUCLEUS OF NATURAL SCIENCES

## MILLENNIUM NUCLEUS MULTIFUNCTIONAL MATERIALS FOR APPLIED SURFACE SCIENCE - MULTIMAT



### RESEARCHERS

**Director**  
Judit Lisoni (UACH)

**Acting Director**  
Rodrigo García

**Associate Researchers**  
Eduardo Cisternas  
Rodrigo Espinoza  
Marcos Flores  
Samuel Hevia

**Young Associate Researchers**  
Joseba Orive  
Loreto Troncoso



### ACTIVE MILLENNIUM NUCLEUS CENTER

From 2017 to 2026  
The Millennium Nucleus centers can be renewed after 3 years, reaching a maximum of 6 years.



### PRESENCE METROPOLITANA REGION LA ARAUCANÍA REGION LOS RÍOS REGION



### RESEARCH TOPICS

- Development of pattern formation techniques with submicrometric dimensions for the generation of advanced nanometric devices.
- Development of novel characterization techniques for the study of nanostructured materials, such as conductive atomic force microscopy.
- Generation of new nanostructured polyoxyanionic materials based on vanadium oxide that may be effectively used as electrodes in lithium-ion batteries.
- To explore alternatives for Lithium, such as Sodium or Potassium, as potential candidates to replace Lithium-Ion batteries

### NOTED OUTREACH ACTIVITIES

- Judit Lisoni's talk in Nerd Nite. (2017)
- Intervention of Judit Lisoni in Universidad de Chile (Santiago) and UACH (Valdivia) radio stations. (2017)

### HOST INSTITUTIONS:

