



7 de ABRIL de 2021

12.00 h
Zoom

• **INMA** **Junior**

Receptor-targeted drug delivery using peptides and nanoparticles

Zsuzsa Baranyai
INMA-CSIC/UNIZAR

Efficient and site-specific delivery of therapeutic agents is a critical challenge in the clinical treatment of various diseases including cancer and infections. Active targeting relies on the interaction between specific receptors of a target cell and their ligands. Therefore, active targeting is a key approach to direct more effectively drugs toward the diseased tissue and to reduce their side effects. This strategy can be based on the direct coupling of a therapeutic agent to a specific ligand or based on the incorporation of the drug into a ligand-directed nanocarrier. In this work the design, synthesis and evaluation of drug-peptide conjugates and ligand functionalized, drug-loaded nanocapsules are presented as potent tools in the fight against gliomas and tuberculosis.

Coherent coupling of on-chip LC resonators to nuclear spin qubits

Víctor Rollano García
INMA-CSIC/UNIZAR

In this talk, strong coupling to [$^{173}\text{Yb}(\text{trensal})$] nuclear spin transitions will be presented. This milestone in the development of a molecular spin quantum processor has been accomplished by employing on-chip superconducting resonators at mK temperatures. Nuclear spins represent a potential and promising path for spin-based quantum computing since molecules like [$^{173}\text{Yb}(\text{trensal})$] present numerous nuclear spin transitions. This feature enables encoding several qubits (qudit), opening the way to molecular spin quantum processors with built-in error correction protocols.