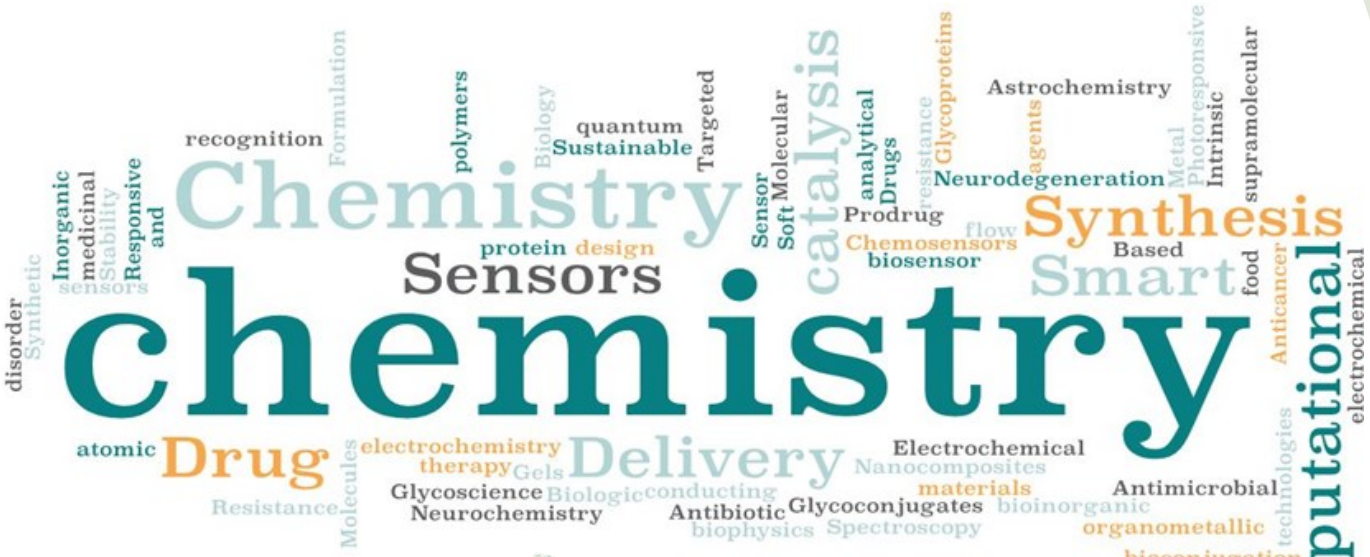
DEPARTMENT OF CHEMISTRY RESEARCH



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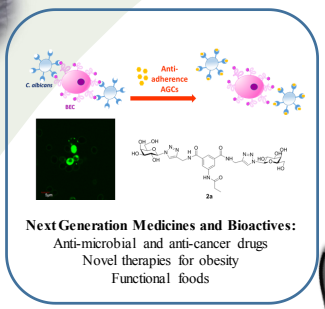
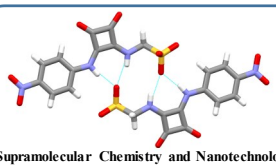
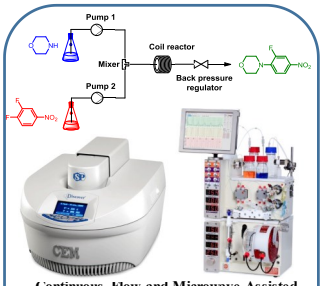
Organic, Pharmaceutical and Medicinal Chemistry



Next Generation Medicines and Bioactives:
Anti-microbial and anti-cancer drugs
Novel therapies for obesity
Functional foods

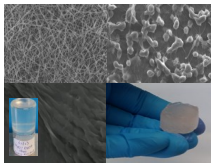


Supramolecular Chemistry and Nanotechnology:
Self-assembled materials
Nanoparticle conjugates

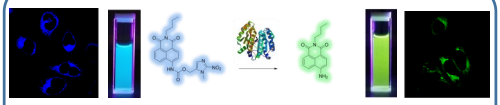


Continuous Flow and Microwave Assisted Organic Synthesis:
New routes to key chemical intermediates
Green and sustainable chemistry

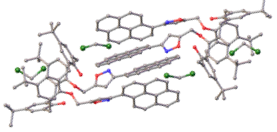
Organic, Pharmaceutical and Medicinal Chemistry



New Functional Materials:
Low molecular weight gelators
Biomimetic drug delivery vehicles



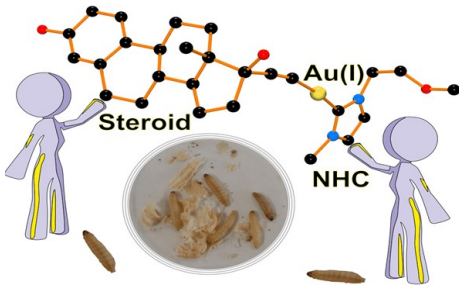
Improved Medical Diagnostics:
Biomolecular conjugates and Fluorescence imaging agents

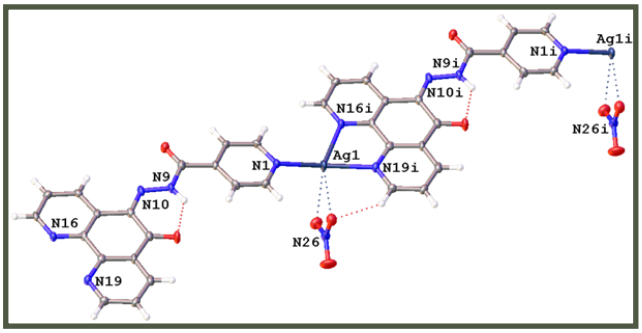


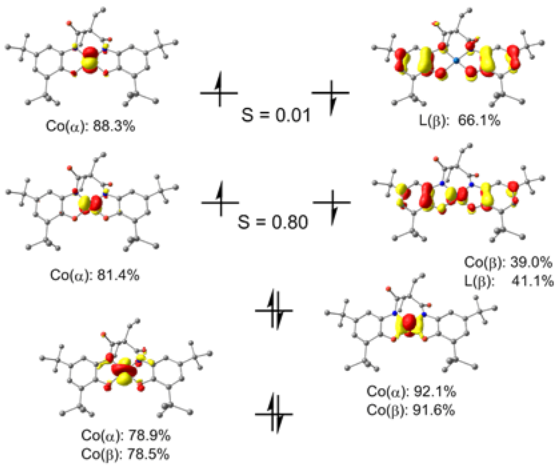
Sensor Technologies:
Molecular recognition and sensing
Analyte quantitation

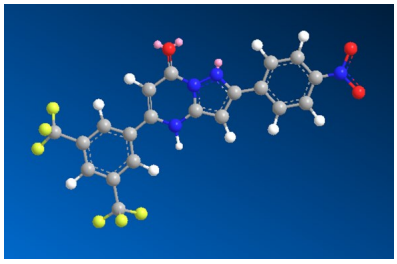
Design and synthesis of medicines and new, more effective therapies for disease, together with responsive molecular systems in order to solve biological challenges (Dr. John Stephens, Dr. Robert Elmes, Prof. Frances Heaney and Dr. Trinidad Velasco-Torrijos).

Inorganic and Bioinorganic Chemistry



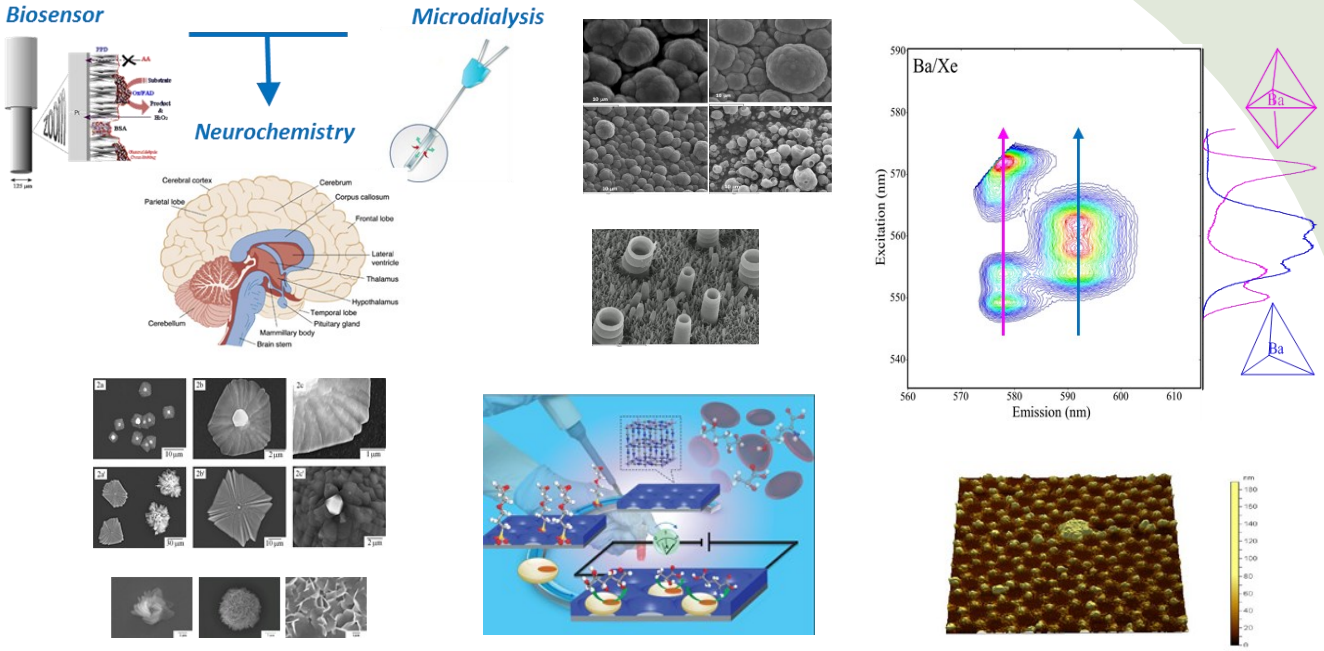






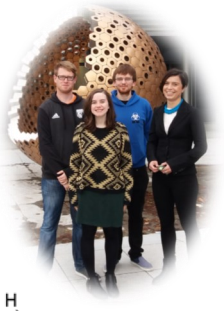
Synthesis and testing of new metal based drugs in the search for anti-cancer and anti-microbial candidates. Quantum chemical methods, such as density functional theory, and theoretical spectroscopy are used to study bonding and reaction mechanisms. (Dr. Denise Rooney, Dr. Diego Montagner, Dr. Tobias Krämer).

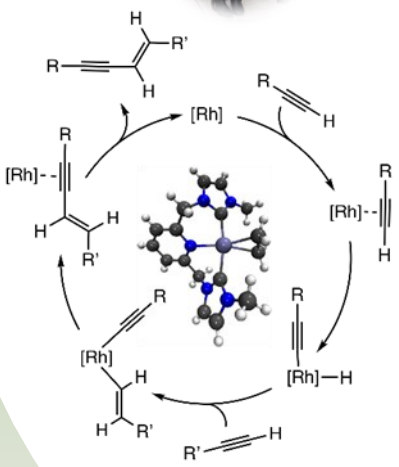
Physical and Analytical Chemistry

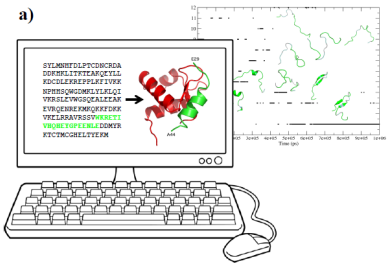


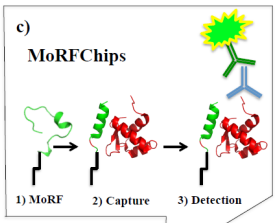
Preparation of nano and functional redox active materials for environmental/biomedical testing scenarios together with design of microelectrochemical sensors/biosensors for real-time studies of neurochemical phenomena. Use of luminescence spectroscopy and quantum chemical methods to study interactions of atoms and molecules with their environments when isolated in the solid state (Dr. John McCafferty, Prof. John Lowry, Prof Carmel Breslin, Dr. Eithne Dempsey).

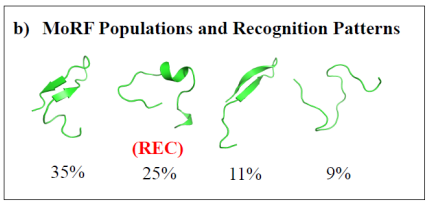
Computational Chemistry and Biophysics

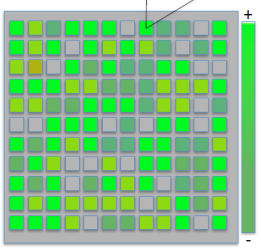




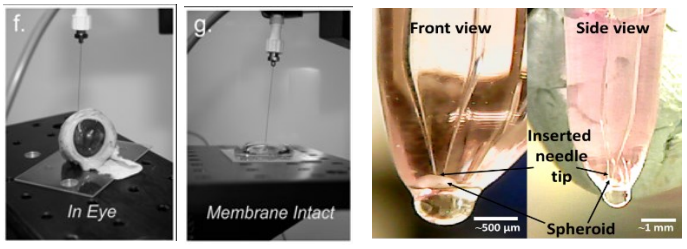








Mechanical Properties of Soft Materials and Tissues



Study of bonding, reaction mechanisms, and molecular recognition of poorly structured biomolecules; Understanding the chemical and physical forces driving self-assembly of proteins and soft materials (Dr. Jennifer McManus, Dr. Elisa Fadda, Dr. Tobias Krämer).

Dept. Chemistry International Collaborators, Industry and State Funders

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