Novel Smart Metal Complexes

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Applications in human health and environmental sustainability

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3 Inorganic Chemistry teams

Structured / non-structured staff: 2 PO, 3 PA, 1 RU / 1 Post-Doc, 7 PhD

School of Science and Technology – ChIP Research Centre

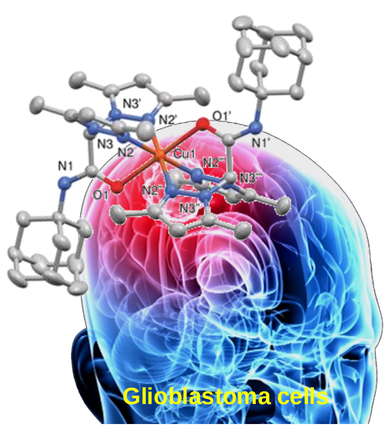
Characterizing studies

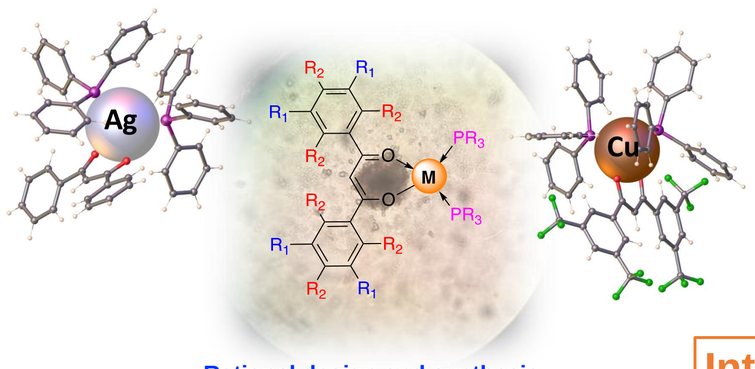
1) Synthesis and characterisation of new metal complexes and investigation of their antitumour, antimicrobial and antiviral activity.
2) Synthesis and characterisation of new metal complexes as green catalysts for crosslinking process of silane-grafted polyolefins, allylic oxidation and methyl methacrylate polymerization.
3) Synthesis and characterisation of new luminescent metal complexes as VOCs sensors and for bioimaging or OLED components.
4) Synthesis of new antimicrobial and photocatalytic nanomaterials for use in agri-food chain to reduce post-harvest losses of perishable products

National Impact: The research has a significant impact at national levels, with the discovery of new molecules for use as antitumor, antimicrobial and antiviral agents or as luminescent materials. Unicam "researchers" collaborate with biologists, oncologists, virologists and clinical microbiologists in the screening of metal complexes as bioactive drugs.

International Impact: Research at UNICAM has a global impact, with long-standing collaborations with international research groups and European companies across the polymer, agricultural harvesting and distribution sectors, as it promotes the development of new green catalysts, metal-based drugs, metal-based sensors, and innovative nanomaterials for the extension of the shelf life of perishable agricultural products along the distribution chain.

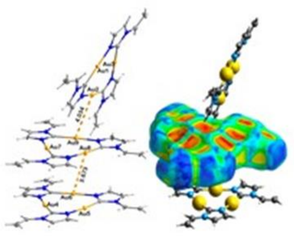
Relations with SME:
UNICHEM, Porto Sant'Elpidio, FM
AIPOL, Montegranaro, FM
FIAM ITALIA, Tavullia, PS
DELTA GROUP, Civitanova Marche, MC
FAINPLAST, Ascoli Piceno, AP
AUTOMA srl, Ancona, AN

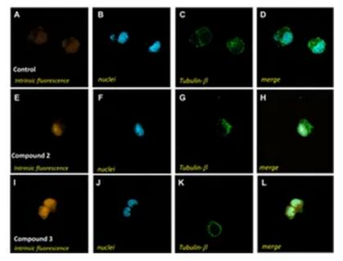


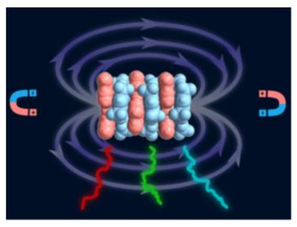


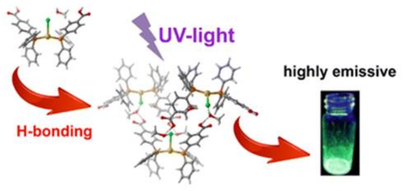
Rational design and synthesis
of metal-based drugs and catalysts

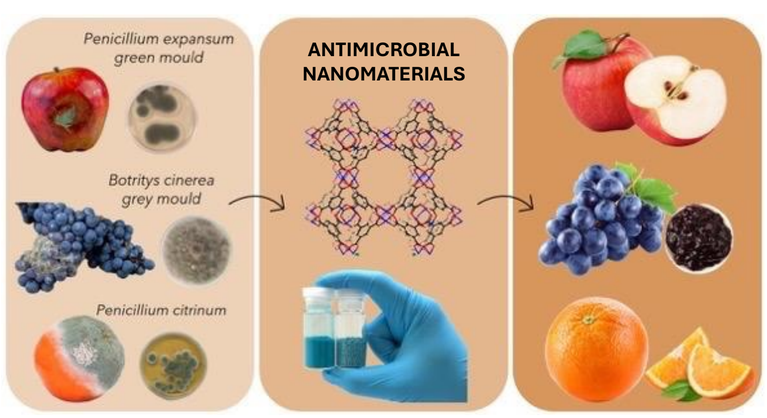
Luminescent materials for OLEDs and Bioimaging











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- **Istituto Superiore Di Sanità** (Convenzione 2023)
- **MIMIT** (Progetto AAIWAS, 2023)

International collaborations:

- European Synchrotron Radiation Facility, Grenoble, France
- Zhengzhou University of Light Industry, Zhengzhou, China
- University of North Texas, Denton, Texas, USA
- University of Cincinnati, Cincinnati, Ohio, USA
- University of Texas, Arlington, Texas USA
- EPLF Losanna, Losanna, Switzerland
- Université Laval, Québec, Canada
- McGill University, Montreal, Canada
- Lomonosov Moscow State University, Moscow, Russia
- Technische Universität München, München, Germany
- Technische Universität Dresden, Dresden, Germany
- IST - Universty of Lisbon, Lisbon, Portugal
- University of Granada, Granada, Espana
- University of Siviglia, Granada, Espana
- University of Wrocław, Wrocław, Poland
- National Burn Center, Yerevan, Armenia
- Université Cadi Ayyad, Marrakech, Morocco