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**BioMOFs – Exploring nalidixic acid metal organic networks envisaging pharmaceutical applications**

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Nanoporous materials have attracted the interest of both academia and industry in various applications, the best known being gas storage, gas separation and shape/size selective catalysis. Recently they started to be used in drug storage and delivery as well as in medical imaging and sensing. One of the most important challenges in drug delivery research is the efficient transport and release of drugs in the body using nontoxic nanocarriers to improve their activity and MOFs present the potential characteristics to solve this problem since they combine a high pore volume, a regular porosity and the presence of tunable organic groups within the framework, which allow the modulation of the structure of the framework as well as of the pore size. From a series of different active pharmaceutical ingredients (API) tested, results with nalidixic acid have shown to be promising. Nalidixic acid is a quinolone antibiotic used for the treatment of urinary tract infections, which can also act as bacteriostatic and as bactericidal. Bio-inspired networks of this API with safe metals are being successfully explored. Coordination with different metals, including Zn, Mn and Mg, yielded novel coordination networks. The use of second ligands, such as oxalic and citric acids, has shown to be successful and it represents a pathway to obtain structures with higher porosity. Most of these new forms can be obtained by mechanochemistry, an efficient and environment-friendly synthetic technique. The solubility and stability of these compounds sustents their viability for pharmaceutical applications.

**Biography**

Vânia André has completed his PhD from University of Lisbon and currently a Post-doctoral fellow at Universities of Lisbon and Aveiro. She has published more than 50 papers in reputed international journals, 2 patents, 5 book chapters, 3 national publications and over 80 communications. She attended over 20 international schools/workshops/conferences to enrich her scientific knowledge and build a network of international scientists. Since 2006, she is focused on applying Crystal Engineering and Supramolecular Chemistry towards improving crystal forms of active pharmaceutical ingredients. Currently she is developing bio-inspired metal organic frameworks for enhanced drug storage, delivery and release.

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