

Special Issue

Metal-Organic Frameworks: Pioneering New Solutions for Biomedical Challenges

Message from the Guest Editors

Metal-Organic Frameworks (MOFs) are highly porous materials featuring tunable properties, making them especially appropriate for a wide range of biomedical applications. They are used in drug delivery systems, where their large surface areas, size control, and customizable structures allow for the controlled release, specific protection, and improved bioavailability of therapeutic agents. MOFs also show promise in the field of cancer therapy by targeting tumor sites, as well as in medical imaging and diagnostics due to their ability to bind target biomolecules specifically. Moreover, further promising applications of MOFs are their potential as bio-sensors and for antibacterial and antiviral applications as an excellent alternative to classical treatment with antibiotics. Despite these advancements, we are far from overcoming key challenges. However, ongoing research on smart MOFs and their combination with other nanomaterials points to a future where MOFs could revolutionize personalized medicine and targeted therapies. Therefore, this Special Issue requests research and review papers tackling the challenges of using MOFs for medical or biomedical applications.

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