

Submission Deadline: August 1, 2022



Mössbauer Spectroscopy from artificial nano architectures to environmental applications

Mössbauer spectroscopy has been used extensively in past decades in materials science. After the early period of measuring mostly iron-containing compounds, more detailed information can be learned from Mössbauer spectra using new experimental tools, such as more sophisticated electronics and computational evaluation methods. With the help of particle size dependent magnetic phenomena (super paramagnetism), material properties of nanomaterials can be studied separately for various particle size ranges. Mössbauer spectroscopy can also address environmental challenges of soil and pollutants with iron-containing particles and nanoparticles, allowing more effective waste water treatment technologies with disinfectants like ferrate(VI). The technique faces great change as the application of synchrotron radiation as an emerging experimental technique and quantum chemical calculation of Mössbauer parameters open new horizons for the method.

This *JMR* Focus Issue will include topics about Mössbauer studies on materials from natural or artificial nanostructures to bulk materials having special physical properties due to their microstructure. Environmental issues are also targeted where nanostructures like soil, and its relevance to plant physiology poses a great challenge to researchers.

Manuscripts are solicited in the following areas:

- ◆ Synthesis and characterization of nano structured iron oxides and oxyhydroxides
- ◆ Amorphous and microstructured materials
- ◆ Mössbauer studies in environmental research
- ◆ Wastewater treatment, catalysis
- ◆ Artificial nano layers and other nano structures
- ◆ Synchrotron Mössbauer spectroscopy
- ◆ Computational techniques in the interpretation of hyperfine interactions
- ◆ Instrumental development in Mössbauer measurements (high resolution, external field, etc.)

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MANUSCRIPT SUBMISSION

To be considered for this issue, new and previously unpublished results significant to the development of this field should be presented. The manuscripts must be submitted via the *JMR* electronic submission system by August 1, 2022. Manuscripts submitted after this deadline will not be considered for the issue due to time constraints on the review process. Please select “Focus issue: Mössbauer Spectroscopy from Artificial Nano Architectures to Environmental Applications” as the Focus Issue designation. **Note our manuscript submission minimum length of 3250 words, excluding figures, captions, and references, with at least 6 and no more than 10 figures and tables combined. Review articles may be longer but must be pre-approved by proposal to the Guest Editors via jmr@mrs.org. The proposal form and author instructions may be found at www.mrs.org/jmr-instructions.** All manuscripts will be reviewed in a normal but expedited fashion. Papers submitted by the deadline and subsequently accepted will be published in the Focus Issue. Other manuscripts that are acceptable but cannot be included in the issue will be scheduled for publication in a subsequent issue of *JMR*.

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