

Accolades

Kukkadapu Recognized as International Leader in Mössbauer Spectroscopy

EMSL research Ravi Kukkadapu recently received two international honors in the Mössbauer spectroscopy community. At the International Conference on the Applications of the Mössbauer Effect in Vienna, Austria, he was featured as an emerging leader in the Mössbauer community. He received this honor from distinguished Professor John Stevens, Director of the Mossbauer Effect Data Center, a research institute at the University of North Carolina.

In addition, Kukkadapu was invited to give a keynote talk at the upcoming Clay Minerals Group of the Mineralogical Society in the United Kingdom. At this annual conference, he will discuss the effect of iron-mineral (bio)transformations on remediating contaminated aquifers that contain radioactive metals such as uranium, technetium, and plutonium. Contaminated aquifers, which can occur during nuclear material production and weapons development, are a problem worldwide.



At the Department of Energy's EMSL, Kukkadapu oversees the facility's ^{57}Fe -Mössbauer spectrometers. These instruments are ^{57}Fe -specific and provide information, such as valence state, coordination geometries, and magnetic hyperfine interactions, on iron-containing materials. His work focuses on how (bio)transformation of iron-minerals present in the subsurface impact radioactive metal remediation under different biogeochemical conditions. This data will provide insights necessary to develop biogeochemical models for long-term monitoring of contaminated aquifers. He is also active in a number of other projects funded by DOE's Environmental Remediation Sciences Program.

In the last few years, he has written or co-written more than 35 papers on research done on the Mössbauer instruments for high-impact environmental journals. He is a frequently requested speaker at conferences and seminars.

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