



ABOUT

Karlsruhe Institute of Technology (KIT) was established by the merger of Forschungszentrum Karlsruhe GmbH and Universität Karlsruhe (TH) on 01 October 2009. KIT combines the tasks of a university of the state of Baden-Württemberg with those of a research centre of the Helmholtz Association in the areas of research, teaching, and innovation.

Institute for Nuclear Waste Disposal (INE) at KIT is mainly engaged in R&D on long term safety assessment of nuclear waste disposal, vitrification of high-level liquid waste, nuclear decommissioning and solvent extraction.

EXPERTISE

Due to INE's involvement in numerous EURATOM projects on actinide separations, we have more than 20 years' experience in developing and optimising solvent extraction chemistry and processes. Such processes separate metal ions (actinides) from complex mixtures containing many other metal ions; a task similar to those encountered in the recycling of non-nuclear metallic materials.

We offer our expertise related to various stages in the development of solvent extraction processes:

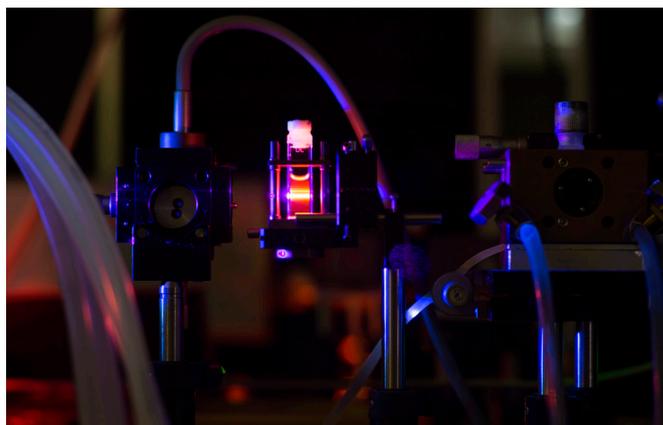
- Extractant/solvent design and testing
- Synthesis of extractants
- Determination of distribution data (metal ions and mineral acids)
- Solvent extraction kinetics
- Viscosity measurement
- Radiotracer techniques
- Spectroscopic investigations
- Flow-sheet design
- Troubleshooting

Furthermore, we are licensed to handle any radioactive material, allowing us to process ores and other materials containing e. g. uranium and thorium and their decay products.

FACILITIES & SERVICES

INE is fully equipped to perform solvent extraction experiments and basic studies related to solvent extraction systems. Solvent extraction experiments are performed using temperature-controlled equipment. Instrumentation for the analysis of both radioactive and inactive samples includes: ICP-MS, ICP-OES, AAS, alpha and gamma spectrometry, LSC, UV-vis, NMR, potentiometric titration, viscosimetry.

X-ray spectroscopy techniques (XAFS, XRD, HR-XANES/RIXS) are available at the INE-Beamline and ACT stations at the KIT synchrotron source. Dedicated laboratories to carry out synthesis and characterisation of novel or improved extracting agents are also available.



MORE INFORMATION

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