

Joint TecRad - RULET Autumn School on Technetium and other Fission Products

Report of Contributions

Contribution ID: 7

Type: **not specified**

Welcome

Monday 24 November 2025 13:00 (10 minutes)

Contribution ID: 8

Type: **not specified**

The necessity of developing methodologies to monitor fission products with exotic oxidation states

Monday 24 November 2025 13:10 (40 minutes)

Presenter: MAYORDOMO HERRANZ, Natalia (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: 9

Type: **not specified**

Site Selection, Safety Analyses and their legal framework –where does Tc come into play?

Monday 24 November 2025 13:50 (40 minutes)

Presenter: BORKEL, Christoph (BASE)

Contribution ID: **10**

Type: **not specified**

Technetium - The Unknown Center of the Periodic Table

Monday 24 November 2025 14:50 (40 minutes)

Presenter: STRUB, Erik (University of Cologne)

Contribution ID: 11

Type: **not specified**

Comprehensive insights into material degradation characteristics by a multi-analytical approach on different length scales

Monday 24 November 2025 15:30 (40 minutes)

Namen der Autoren

Acknowledgements

Presenter: STEPHAN-SCHERB, Christiane (Martin-Luther-Universität Halle-Wittenberg)

Contribution ID: 13

Type: **not specified**

Revisiting Technetium-99 Immobilization: Anoxic Remobilization Pathways Driven by Redox Active Geochemical Substrates

Monday 24 November 2025 16:10 (40 minutes)

Presenter: ANAGNOSTOPOULUS, Vasileios (University of Central Florida)

Contribution ID: 15

Type: **not specified**

Assessment of the containment of contaminants in subsurface barriers

Tuesday 25 November 2025 09:00 (40 minutes)

Presenter: WOLF, Jens (Gesellschaft für Anlagen- und Reaktorsicherheit gGmbH)

Contribution ID: 16

Type: **not specified**

The range of Technetium valences and how that variation drives the formation of different oxide structures

Tuesday 25 November 2025 09:40 (40 minutes)

Presenter: THOROGOOD, Gordon J. (Australia's Nuclear Science and Technology Organisation)

Contribution ID: 17

Type: **not specified**

From Speciation to Retention: Understanding Selenium Mobility in the Geosphere

Tuesday 25 November 2025 11:00 (40 minutes)

Namen der Autoren

Acknowledgements

Presenter: JORDAN, Norbert (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: **18**

Type: **not specified**

^{77}Se and ^{99}Tc NMR spectroscopy: a versatile tool for studying fission product behavior in aqueous systems

Tuesday 25 November 2025 11:40 (40 minutes)

Presenter: KRETZSCHMAR, Jérôme (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: **19**

Type: **not specified**

FeII-mediated and direct immobilization of ^{99}Tc by the bentonite-isolate *Desulfitobacterium* sp. G1-2

Tuesday 25 November 2025 10:20 (2 minutes)

Presenter: CARDAIO, Irene (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: 20

Type: **not specified**

The behavior of Tc(I) in the environment - Sorption studies of $[\text{Tc}(\text{CO})_3(\text{H}_2\text{O})_3]\text{BF}_4$ with different minerals

Tuesday 25 November 2025 12:20 (5 minutes)

Presenter: BÖRNER, Caroline (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: 21

Type: **not specified**

Isothermal calorimetry - a versatile method to determine a wide range of thermodynamical properties in aqueous systems

Tuesday 25 November 2025 15:30 (40 minutes)

Presenter: HAGEMANN, Sven (Gesellschaft für Anlagen- und Reaktorsicherheit gGmbH)

Contribution ID: 22

Type: **not specified**

Thermodynamic stability of ^{226}Ra -containing carbonate phases: atomistic simulations and thermodynamic calculations

Tuesday 25 November 2025 16:10 (5 minutes)

Presenter: RUDIN, Stefan (Forschungszentrum Jülich)

Contribution ID: 23

Type: **not specified**

Cobalt Depletion by Inorganic Sorbents

Tuesday 25 November 2025 16:15 (5 minutes)

Namen der Autoren

Acknowledgements

Presenter: ARTIUSHOVA, Elizaveta (University of Bern)

Contribution ID: 24

Type: **not specified**

Optimizing culture conditions for the interaction of Pseudodesulfovibrio aespoeensis with Tc(VII)

Tuesday 25 November 2025 16:20 (5 minutes)

Presenter: SOLÉ BONILLO, Carmen (Technische Universität Dresden)

Contribution ID: 25

Type: **not specified**

Learning From Nuclear Medicine To Help Cure ^{99}Tc Contaminated Land

Tuesday 25 November 2025 16:25 (5 minutes)

Namen der Autoren

Acknowledgements

Presenter: ROBINSON, Callum (The University of Manchester)

Contribution ID: 26

Type: **not specified**

**Pertechnetate electrochemical reduction in
carbonate environment: In situ and ex-situ
 ^{99}Tc -NMR and UV/VIS spectroelectrochemical
studies**

Tuesday 25 November 2025 16:30 (5 minutes)

Presenter: BUREIKA, Arkadz (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: 27

Type: **not specified**

Normalization and isobar suppression methods for AMS-based ultra-trace detection of Technetium-99

Tuesday 25 November 2025 16:35 (5 minutes)

Namen der Autoren

Acknowledgements

Presenter: ADLER, Stephanie (University of Vienna)

Contribution ID: 28

Type: **not specified**

Synthesis and characterization of macropa-based complexes for the stable coordination of radiometals

Tuesday 25 November 2025 16:45 (5 minutes)

Presenter: CASTRO BIONDO, Rodrigo (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: 29

Type: **not specified**

Reduction of Pertechnetate by Magnetite Nanoparticles

Tuesday 25 November 2025 16:40 (5 minutes)

Namen der Autoren

Acknowledgements

Presenter: ZIMMERMANN, Thomas (Albert-Ludwigs-University Freiburg)

Contribution ID: 30

Type: **not specified**

Accelerator produced 99mTc for medical applications: Technical and chemical optimizations and comparison with conventional Al₂O₃ generator systems

Tuesday 25 November 2025 16:50 (5 minutes)

Namen der Autoren

Acknowledgements

Presenter: MICHEL, Marcos (University of Cologne)

Contribution ID: **31**

Type: **not specified**

Career Panel Discussion

Contribution ID: 32

Type: **not specified**

Experimental and Theoretical 99Tc NMR Spectroscopy

Tuesday 25 November 2025 10:25 (2 minutes)

Presenter: ROCA JUNGER, Maximilian (Karlsruhe Institute of Technology)

Contribution ID: 33

Type: **not specified**

Retention of Tc by Fe(II) solid phases: Combining wet chemistry experiments and spectroscopic data

Tuesday 25 November 2025 12:25 (5 minutes)

Presenter: WOLF, Julius (Karlsruhe Institute of Technology)

Contribution ID: 34

Type: **not specified**

Insights into how pyrite immobilizes technetium-99 in metabolite-rich environments

Tuesday 25 November 2025 16:55 (5 minutes)

Presenter: SAINI, Vijay (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: 35

Type: **not specified**

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Wednesday 26 November 2025 09:00 (40 minutes)

Presenter: LLOYD, Jon (The University of Manchester)

Contribution ID: 36

Type: **not specified**

AI-assisted lab-on-a-chip experiments: Setting new frontiers in radio-geochemistry

Wednesday 26 November 2025 09:40 (40 minutes)

Presenter: POONOOSAMY, Jenna (Forschungszentrum Jülich)

Contribution ID: 37

Type: **not specified**

Imaging Tc at the nanoscale by Secondary Neutral Mass Spectrometry

Wednesday 26 November 2025 11:00 (40 minutes)

Presenter: WALTER, Clemens (Leibniz Universität Hannover)

Contribution ID: 38

Type: **not specified**

Some Insights into Tc Chemistry from a Radiopharmacy View Point. Is There Relevance for Tc Chemistry in Fission Waste?

Wednesday 26 November 2025 14:10 (40 minutes)

Presenter: ALBERTO, Roger (Universität Zürich)

Contribution ID: 39

Type: **not specified**

XAS based speciation of technetium and long-lived fission products

Wednesday 26 November 2025 15:20 (40 minutes)

Presenter: ROTHE, Jörg (Karlsruhe Institute of Technology)

Contribution ID: 40

Type: **not specified**

From Plutonium to Technetium: Unraveling Hanford's Nuclear Legacy and Quest for Clean-Up

Wednesday 26 November 2025 13:30 (40 minutes)

Presenter: SASLOW, Sarah (Pacific Northwest National Laboratory)

Contribution ID: 41

Type: **not specified**

Controls on the Long-Term Migration and Fate of Selenium and Technetium: Insights from Complex Environmental Systems

Wednesday 26 November 2025 11:40 (40 minutes)

Presenter: LAW, Gareth (University of Helsinki)

Contribution ID: 42

Type: **not specified**

Ab initio speciation of Tc-gluconate complexes in aqueous systems

Wednesday 26 November 2025 16:00 (40 minutes)

Presenter: POLLY, Robert (Karlsruhe Institute of Technology)

Contribution ID: 43

Type: **not specified**

Dinner (self-paid)

Contribution ID: 44

Type: **not specified**

Radiological legacy in forests adjacent to the Fukushima Daiichi Site: Interactions of key fission products with soil and biomonitors

Thursday 27 November 2025 09:00 (40 minutes)

Presenter: SASAKI, Takayuki (Kyoto University)

Contribution ID: 45

Type: **not specified**

Solution chemistry of Tc under conditions relevant for nuclear waste disposal

Thursday 27 November 2025 09:40 (40 minutes)

Presenter: GAONA, Xavier (Karlsruhe Institute of Technology)

Contribution ID: 46

Type: **not specified**

Environmental Technetium-99 Detection at the Limits of (A)MS Sensitivity

Thursday 27 November 2025 11:00 (40 minutes)

Presenter: HAIN, Karin (Universität Wien)

Contribution ID: 47

Type: **not specified**

SQUID measurements on actinide complexes

Thursday 27 November 2025 11:40 (40 minutes)

Presenter: GUERICKE, Robert (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: 48

Type: **not specified**

Workshop Wrap-Up / End of School

Thursday 27 November 2025 12:20 (15 minutes)

Contribution ID: 49

Type: **not specified**

Immobilization of technetium(+1) with gamma-alumina and hematite

Tuesday 25 November 2025 17:00 (5 minutes)

Presenter: EUM, Jiyoung (Technische Universität Dresden)

Contribution ID: 50

Type: **not specified**

The Role of Pseudodesulfovibrio aespoeensis in the Immobilization of ^{99}Tc

Tuesday 25 November 2025 17:05 (5 minutes)

Presenter: MARTINEZ MORENO, Marcos F. (Helmholtz-Zentrum Dresden-Rossendorf e.V.)

Contribution ID: 51

Type: **not specified**

Optional: Visit HZDR Research Facilities

Thursday 27 November 2025 13:00 (2 hours)

Contribution ID: 53

Type: **not specified**

Career Panel Discussion

Monday 24 November 2025 17:10 (1h 10m)

Presenters: STEPHAN-SCHERB, Christiane (Martin-Luther-Universität Halle-Wittenberg); BORKEL, Christoph (BASE); RODRÍGUEZ HERNANDEZ, Diana (ROTOP Pharmaka GmbH); POONOOSAMY, Jenna (Forschungszentrum Jülich); STUMPF, Silvia (Projektträger Karlsruhe)