

IRIS 2027

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International Radioisotope and Isotope Supply Meeting

19 – 20 April 2027 | Grandior Hotel, Prague, Czech Republic

(Organised in conjunction with RRFM 2027)

Call for Papers

The **IRIS Meeting** offers a platform for professionals and organisations working at every stage of the isotope value chain to share insights, practical solutions, and forward-looking developments. The goal is to foster exchange between those advancing isotope separation and production technologies and those applying isotopes in medicine, industry, science, and beyond.

Reflecting the evolving technological, industrial, and strategic landscape, the scope of IRIS has broadened from radioisotopes to encompass **all isotopically pure materials and enriched stable isotopes**. These materials represent critical strategic assets not only as precursors for medical and industrial radionuclides, but also for next-generation semiconductor fabrication, quantum technologies, advanced nuclear energy systems, and foundational physical sciences.

We encourage contributions from organisations and individuals engaged in isotope R&D, physical and chemical separation, target fabrication, reactor and accelerator operations, infrastructure development, quality assurance, logistics, regulatory oversight, policy making, and end-use applications—across both public and private sectors. Whether your work supports the supply chain of emerging radionuclides for cancer therapy, stable feedstocks for quantum computing, established industrial radiation sources, radioisotopes for power applications (RTGs), or advanced reactor and accelerator irradiation techniques, IRIS aims to stimulate exchange of your expertise and enrich it.

Contributions from equipment manufacturers, chemical converters, service providers, and end-users are welcome - especially those addressing production challenges, logistics, regulatory aspects, or case studies that illustrate the impact and evolving needs for isotope supply.

Topics of Interest

Submissions are encouraged on the following topics:

1. Isotopic Enrichment & Physical Separation Methods

- Isotope enrichment and separation technologies:
 - Electromagnetic Isotope Separation (EMIS)
 - Gas centrifuge technologies and cascades
 - Laser isotope separation: Atomic Vapor Laser Isotope Separation (AVLIS), Molecular Laser Isotope Separation (MLIS)
 - Cryogenic distillation, chemical exchange, and novel physical separation techniques
- Production of enriched stable isotopes and pure isotopic materials (e.g. ^{28}Si , ^{176}Yb , ^{100}Mo , ^{68}Zn , enriched boron, carbon, oxygen, and noble gases)
- Scaling, energy efficiency, and automation of separation infrastructure

2. Stable Isotope Supply Chain and Metrology

- Chemical precursor synthesis and post-enrichment conversion (e.g. gas-to-metal conversion, reduction of gaseous fluorides to sintered metals or oxides) with minimal material loss
- Analytical chemistry, high-precision isotopic metrology (e.g. TIMS, MC-ICP-MS, GD-MS), and certification of chemical vs. isotopic purity
- Closed-loop recycling and chemical reclamation of high-value irradiated targets (e.g. recovering unreacted ^{176}Yb , ^{100}Mo , ^{68}Zn) and re-enrichment economics
- Emerging high-tech end-use markets: quantum information science (e.g. nuclear-spin-free ^{28}Si , ^{12}C diamond NV centers), advanced nuclear materials (e.g. ^7Li , ^{15}N , ^{11}B), and ultra-pure detector materials for neutrino and dark matter physics

3. Targets and Target Management

- Target manufacturing and materials science (metallurgy, pressing, sintering, electroplating, 3D printing)
- Target design, thermomechanical simulation, and cooling for high-power reactor or accelerator irradiation

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- Target stations, automated loading/unloading, and remote handling systems
- In-target radiolysis, target degradation, and target dissolution chemistry
- Target recycling, raw material recovery (e.g. ^{226}Ra), and radioactive/mixed waste management

4. Irradiation Platforms: Reactors and Accelerators

- Neutron activation in research or commercial power reactors
- Fission-based isotope production
- Accelerator irradiation techniques, photonuclear (γ, n) and spallation methods for radioisotope production
- Compact fusion-driven neutron sources, neutron generators, and ion accelerators
- Multi-purpose irradiation facilities, beamline sharing, and scheduling models
- Waste challenges with irradiation platforms

5. Separation Chemistry and Processing

- Radiochemical separation techniques:
 - Liquid-liquid extraction
 - HPLC, ion-exchange, and extraction chromatography
 - ...
- Scaling, modularization, and automation of radiochemical processing
- Hot cell technologies, remote handling equipment, and facility layout
- Radiopurity, chemical purity, and their impact on downstream radiolabeling and pharmaceutical qualification
- Waste streams from radioisotope separation and purification

6. Logistics, Transport & Downstream Applications

- Transport of sealed and unsealed radioactive sources and bulk enriched feedstocks
- Logistics for decentralized radionuclide and radiopharmaceutical supply
- Packages, Container design, specialized shielding, smart tracking, and cold-chain compliance

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- Customs clearance, international transport regulations (IAEA, DOT, ADR, ICAO), and just-in-time supply chains
- Denial of shipment and other specific challenges with transporting radioisotopes

7. Policy, Export Control and Strategic Critical Materials

- Supply security, strategic inventories, and geopolitical diversification of critical target materials
- Export controls, dual-use regulatory compliance, and non-proliferation governance

Important Dates

Next steps	Deadlines
Abstract Submission	14 January 2027
Author Notification	late January / early February 2027
Extended Abstract Submission	19 March 2027
PowerPoint Presentation & CV due	5 April 2027
IRIS 2027 in Prague	19 – 20 April 2027

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- For abstract submission, please visit the [IRIS 2027 Online Abstract Submission System](#).
 - Registration opens in mid-January 2027 in conjunction with RRFM 2027.
 - For further details, exhibition opportunities, and venue updates, visit the [IRIS 2027 website](#).