

THE PHYSICS COLLOQUIUM

Thursday 8 October 2026, 4:00 p.m.
Nijenborgh 4, Lecture Hall 5111.0022

Reactor-based production and separation of medical radionuclides

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Dr. Robin de Kruijff is associate professor at the TU Delft | Reactor Institute, the Netherlands. Her research focuses on the development of radionuclide production and separation routes using their on-site research reactor. She develops nanomaterial based target materials and employs separation techniques such as (microfluidic) solvent extraction, chromatography, and hot atom chemistry to achieve high specific activity radionuclides.

In her talk “Reactor-based production and separation of medical radionuclides” she will build upon the fundamental principles of radionuclide production to explore current innovations supporting the ongoing advancement of nuclear medicine. From the development of innovative reactor target materials and the design of a new irradiation facility to separation systems required to isolate the produced radionuclides from the irradiated target material, this colloquium aims to provide a comprehensive overview of recent developments in reactor-based radionuclide production. Hot atom chemistry based approaches will be covered, where the nuclear recoil experienced by the product radionuclide upon the emission of one or more prompt-gamma photons due to conservation of momentum can be used to isolate the product from the target. Finally, this presentation highlights recently developed separation systems including solvent extraction approaches using microfluidic chips and new resin materials, essential to gain the required radionuclide quality for subsequent radiopharmaceutical developments.

Join us for coffee starting 3:30 p.m. Refreshments will be served after the lecture.

For more information contact the hosts: Julia Even (j.even@rug.nl)

Website: <https://www.rug.nl/research/fse/colloquia/physics-colloquia>