

The development of a technology for an accelerate reduction of the radioactivity of nuclear waste

The experimental Proof of Concept (PoC) – external links

Resources:

Attachment 1 – The prototype

https://drive.google.com/file/d/1T9rfzBDRnnLTnmptCFMt18mkr65HLfXf/view?usp=drive_link

Attachment 2 – The presently used technology of radioactive waste disposal

https://drive.google.com/file/d/1NA2UhieSNlhX_4z_w5gJuYmGvQa2zQeq/view?usp=drive_link

Attachment 3 – The German Patent DE 10 2010 026 585.3

https://drive.google.com/file/d/1hO_1c7pxyKgR4x2vMKF92hy9t8GvZejv/view?usp=drive_link

and

<https://register.dpma.de/DPMAreger/pat/register?AKZ=1020100265853>

German Patent Office – Register information

Attachment 4 – MIRION MicroGe gamma-ray spectrometry device

https://drive.google.com/file/d/1mCSDEij6mVFy1xK_lhe4p5ZBySW3lczG/view?usp=drive_link

Website: <https://newsuntech.de/>

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External links:

(1)

<https://pris.iaea.org/PRIS/WorldStatistics/OperationalReactorsByCountry.aspx> IAEA
– operational reactors

(2)

<https://pris.iaea.org/PRIS/WorldStatistics/UnderConstructionReactorsByCountry.aspx>
IAEA – reactors under construction

(3)

<https://www.iaea.org/newscenter/news/nuclear-power-finally-has-its-moment-at-un-climate-summit> IAEA

(4)

<https://2021-2025.state.gov/the-united-states-joins-multinational-declaration-to-triple-nuclear-energy-capacity-by-2050-to-support-global-climate-and-energy-security-goals/> U.S. State Department, December 2, 2023

(5)

<https://www.iaea.org/newscenter/news/nuclear-energy-makes-history-as-final-cop28-agreement-calls-for-faster-deployment> IAEA

(6)

https://www.oecd-neo.org/jcms/pl_89153/cop28-recognises-the-critical-role-of-nuclear-energy-for-reducing-the-effects-of-climate-change OECD

(7)

<https://www.ans.org/news/article-5646/nuclear-energy-has-watershed-moment-at-cop28/> American Nuclear Society

(8)

https://en.wikipedia.org/wiki/Generation_IV_reactor Wikipedia

(9)

https://en.wikipedia.org/wiki/Louis_de_Broglie Wikipedia

(10)

<https://gammadata.se/product/radiation-detection/radioactive-sources-radiation-detection/gamma-standards/disc-sources/> Eckert & Ziegler – gamma standards type D, the half-lives of the gamma standards are specified

(11)

https://www.ezag.com/wp-content/uploads/2023/08/Gamma_Standards_All_Types.pdf Eckert & Ziegler – gamma standards type D, the half-lives of the gamma standards are specified

(12)

https://www.ezag.com/fileadmin/ezag/user-uploads/isotopes/isotopes/Isotrak/isotrak-pdf/Product_literature/EZIPL/Gamma_Standards_D-Type.pdf Eckert & Ziegler – gamma standards type D, the half-lives of the gamma standards are specified

(13a)

<https://www.usplastic.com/catalog/item.aspx?itemid=74906&catid=894>
Thermo Fisher Scientific, Polycarbonate jar, 500 ml

(13b)

<https://www.thermofisher.com/order/catalog/product/de/de/2116-0500PK>
Thermo Fisher Scientific, Polycarbonate jar, 500 ml, part #: 2116-0500PK

(14a)

<https://www.iaea.org/publications/7185/disposal-options-for-disused-radioactive-sources> IAEA - 2005, PDF – page 25, Fig. 5

(14b)

 https://www-pub.iaea.org/MTCD/Publications/PDF/TRS436_web.pdf IAEA – 2005, PDF – page 25, Fig. 5

(15a)

<https://www.grs.de/sites/default/files/publications/GRS-294.pdf> Nuclear waste from nuclear power plants – La Hague, France, 2012

(15b)

https://drive.google.com/file/d/1PokUKB3dMgliYA5nM5zEBiUIVp1R9Jy/view?usp=drive_link Nuclear waste from nuclear power plants – La Hague, France, 2012

(16a)

<https://www.sciencedirect.com/science/article/pii/S1738573320301650> Nuclear waste from nuclear power plants – paper, available online June 2020

(16b)

https://drive.google.com/file/d/10nKRhrQ52XQ3XBPko4726PJdGWhpdS4N/view?usp=drive_link Nuclear waste from nuclear power plants – paper, available online June 2020

(17)

<https://www.mirion.com/products/technologies/spectroscopy-scientific-analysis/research-education-and-industrial-solutions/special-hpge-sili-detectors/microge-compact-hpge-detector> MIRION MicroGe gamma-ray spectrometry device

(18)

https://drive.google.com/file/d/1RShg4i8MgZ2zxQE1OcJnLDkZKNd0YdJT/view?usp=drive_link MIRION MicroGe device mounted on robotic machines – PDF flyer

(19a)

https://mirionprodstorage.blob.core.windows.net/prod-20220822/cms4_mirion/files/pdf/flyers/ops-829_csm-gr1_application_flyer_04.pdf MIRION CSM GR1 spectrometry device

(19b)

https://drive.google.com/file/d/19yMpFhaL4QFxmC0qWW_5buUD_xWyUc2L/view?usp=drive_link MIRION CSM GR-1 spectrometry device

(20a)

https://www-pub.iaea.org/mtcd/publications/pdf/pub1287_vol2_web.pdf IAEA 2007, PDF – file pages 29 to 135

(20b)

https://drive.google.com/file/d/1Sd18W6a8T0AieN_MODj_39LihpXs8KjQ/view?usp=drive_link IAEA 2007, PDF – file pages 29 to 135

(21)

https://en.wikipedia.org/wiki/Hot_cell Hot cell – Wikipedia

(22)

https://www.ezag.com/wp-content/uploads/2023/08/5_industrial_sources.pdf
Eckert & Ziegler – industrial radiation sources

(23)

<https://www.mirion.com/products/technologies/mirion-technologies-services/measurement-and-expertise-services/onsite-measurement-services-characterization-reports> MIRION Services

(24)

<https://www.thermofisher.com/order/catalog/product/011595.A1> Potassium chloride, 1kg

(25)

<https://www.thermofisher.com/order/catalog/product/de/de/196770010> Potassium chloride, 1kg

(26)

https://en.wikipedia.org/wiki/Primordial_nuclide Primordial nuclide – Wikipedia

(27)

<https://en.wikipedia.org/wiki/Potassium> Potassium – Wikipedia

(28)

<https://en.wikipedia.org/wiki/Potassium-40> Potassium - 40 – Wikipedia

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<https://de.wikipedia.org/wiki/Kaliumchlorid> Kaliumchlorid, Wikipedia, Germany

(30a)

https://www.bmuv.de/fileadmin/Daten_BMU/Download_PDF/Strahlenschutz/strlsch_messungen_aequival_gehalt.pdf German Gov. – 2010 “Bestimmung des Kaliumgehaltes über die Kalium-40 – Aktivität”

(30b)

https://drive.google.com/file/d/1on0iC_Tvn3PdmJyJeZdj8jNEKv2KMJvv/view?usp=drive_link German Gov. – 2010 “Bestimmung des Kaliumgehaltes über die Kalium-40 – Aktivität”