

Title (en)

METHOD OF PRODUCING THE RADIONUCLIDE NICKEL-63

Title (de)

VERFAHREN ZUR HERSTELLUNG DES RADIONUKLIDS NICKEL 63

Title (fr)

PROCÉDÉ DE PRODUCTION DE RADIONUCLÉIDE NICKEL-63

Publication

EP 3671762 A4 20210721 (EN)

Application

EP 18836226 A 20180423

Priority

- RU 2017129007 A 20170814
- RU 2018000258 W 20180423

Abstract (en)

[origin: EP3671762A1] The invention relates to the field of production of radioactive isotopes and more specifically to the technology of production of the radioactive isotope Nickel-63 that is used to manufacture beta-voltaic current sources. The method for producing Nickel-63 radionuclide involves obtaining an initial nickel target enriched in Nickel-62 to get the content as high as 98% or more, the bombardment of the target in the reactor and the enrichment of the exposed product into a light fraction. The initial nickel enriched in Nickel-62 is added to the light fraction until it reaches a content of 98% or more, and is used to make a secondary nickel target. The remaining heavy fraction is converted into a metal form and used for the manufacture of beta-radiation sources that are applied in beta-voltaic current sources. After the bombardment, the solution of the nickel target is subjected to radiochemical cleaning to remove Cu-65 and gamma-active isotopes, in particular Fe-59 and Co-60. The technical result consists in the most complete loading of the reactor cell with Nickel-62 isotope and an increase in the amount of Nickel-63 radionuclide produced.

IPC 8 full level

G21G 1/06 (2006.01); **G21G 1/02** (2006.01)

CPC (source: EP RU)

G21G 1/02 (2013.01 - EP); **G21G 1/06** (2013.01 - EP RU); **G21G 2001/0094** (2013.01 - EP)

Citation (search report)

- [YD] RU 2569543 C1 20151127 - FEDERAL NOE GUP GORNO KHIM KOM [RU], et al
- [A] WO 2017116274 A1 20170706 - FED GOSUDARSTVENNOE UNITARNOE PREDPRIYATIE GORNO-KHIMICHESKY KOMB [RU], et al
- [Y] SOSNIN L J ET AL: "Production of 63 Ni of high specific activity", NUCLEAR INSTRUMENTS AND METHODS IN PHYSICS RESEARCH A, 1 January 1993 (1993-01-01), pages 43 - 44, XP055810900, Retrieved from the Internet <URL:https://pdf.sciencedirectassets.com/271580/1-s2.0-S0168900200X03178/1-s2.0-016890029390526N/main.pdf?X-Amz-Security-Token=IQoJb3JpZ2luX2VjEKM////////wEaCXVzLWVhc3QtMSJIMEYCIQCAV6E20f7p8guRP0dbfCixg6sg7CB2U2IC+pvprP2R2wIhALJh5wrgyP4bO9IZfLu0XhYQIL5DN5rofwx2159pe3EJKvoDCFoQBB0MMDU5MDAzNTQ2ODY1lgz+NR> [retrieved on 20210607]
- See also references of WO 2019035736A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 3671762 A1 20200624; **EP 3671762 A4 20210721**; JP 2020518784 A 20200625; JP 6802902 B2 20201223; RU 2654535 C1 20180521; WO 2019035736 A1 20190221

DOCDB simple family (application)

EP 18836226 A 20180423; JP 2019505382 A 20180423; RU 2017129007 A 20170814; RU 2018000258 W 20180423