

Title (en)
DEVICE AND METHOD FOR THE PRODUCTION OF RADIOISOTOPES

Title (de)
VORRICHTUNG UND VERFAHREN ZUR HERSTELLUNG VON RADIOISOTOPEN

Title (fr)
DISPOSITIF ET PROCÉDÉ POUR LA PRODUCTION DE RADIO-ISOTOPES

Publication
EP 3192079 A1 20170719 (EN)

Application
EP 14765926 A 20140911

Priority
EP 2014069463 W 20140911

Abstract (en)
[origin: WO2016037656A1] Activator for the production of radioisotopes through activation of a material (9) to be activated by submitting said material (9) to a neutron radiation, the activator comprising a target (71) for emitting neutrons when the target (71) is submitted to a particle beam; a diffusor (3) surrounding the target (71) for allowing diffusion within the diffusor (3) of the neutrons emitted by the target (71); a reflector (5) surrounding the diffusor (3) for avoiding neutron leakage out of the diffusor (3) by elastic scattering; a moderator (6) surrounding the diffusor (3) for slowing down and reflecting neutrons that would have leaked outside the reflector (5); a shielding (60) surrounding the moderator (6) for capturing neutrons escaping through the reflector (5) and the moderator (6); wherein the diffusor (3) comprises a plurality of grooves (30) for each holding a sample holder (4) within the diffusor (3), such that a material (9) to be activated and contained in the sample holder (4) is submitted to the radiations of neutrons diffusing within the diffusor (3), wherein the plurality of grooves (30) are positioned at distances from the target (71) different from each other. Method for determining the positions of grooves (30) for holding sample holders (4) in such an activator, comprising the steps of: modeling the activator in a Monte Carlo simulator; simulating the emission of neutrons by the target (71) within the diffusor (3); determining positions within the diffusor (3) where the resonance neutron capture probability is maximized.

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Citation (search report)
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