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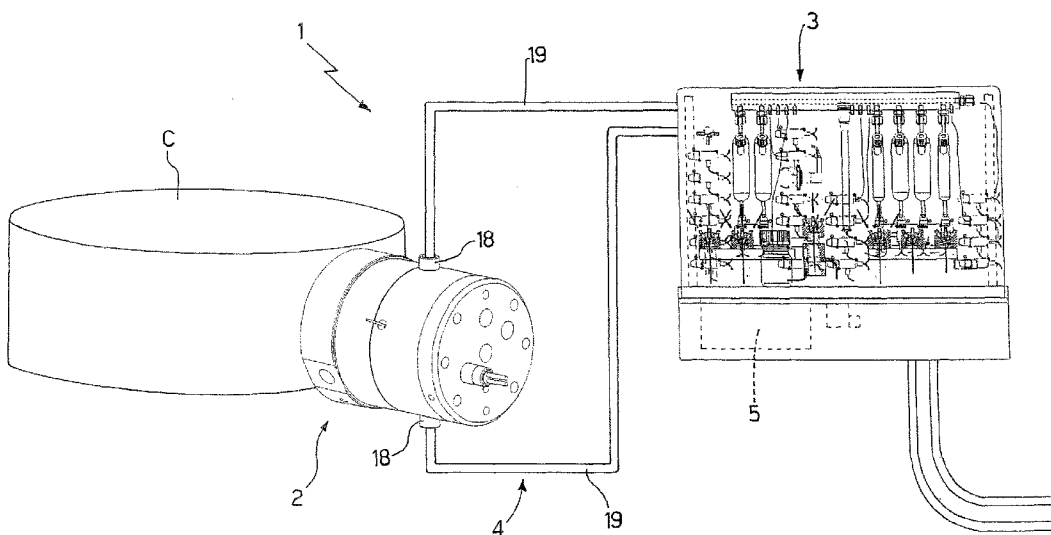
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(54) Title: METHOD AND SYSTEM FOR PRODUCING RADIOISOTOPES



(57) Abstract: A system (1) for automatic production of radioisotopes includes an irradiation unit (2) connectable to a cyclotron (C) and having an electrolytic cell (14); a purification unit (3) for purifying the radioisotope formed in the irradiation unit (2); two conduits (19) for transferring an irradiated and electrodissoved target from the irradiation unit (2) to the purification unit (3); and a central control unit (5) for controlling both the operating units (2, 3) and the transfer means (4). The method for producing radioisotopes is such that the target carrier is not dissolved together with the irradiated target.



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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G21G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | US 4 487 738 A (O'BRIEN, JR. ET AL) 11 December 1984 (1984-12-11) the whole document | 1-13 |
| A | US 5 037 602 A (DABIRI ET AL) 6 August 1991 (1991-08-06) the whole document | 1-13 |
| A | WO 97/07122 A (WASHINGTON UNIVERSITY; NEWTON SCIENTIFIC, INC) 27 February 1997 (1997-02-27) cited in the application the whole document | 1-13 |
| | ----- -/-- | |

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Date of the actual completion of the international search

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | PATENT ABSTRACTS OF JAPAN vol. 013, no. 342 (P-908), 2 August 1989 (1989-08-02) & JP 01 102397 A (NIPPON TELEGR & TELEPH CORP <NTT>), 20 April 1989 (1989-04-20) abstract | 1-13 |
| A | ----- DATABASE WPI Section Ch, Week 199411 Derwent Publications Ltd., London, GB; Class A88, AN 1994-090714 XP002366341 & SU 1 029 559 A1 (AS UZB NUCL PHYS INST) 30 November 1993 (1993-11-30) abstract | 1-13 |
| A | ----- DATABASE WPI Section Ch, Week 198639 Derwent Publications Ltd., London, GB; Class K08, AN 1986-256783 XP002366342 & SU 760 636 A (NUCLEAR RES COMBINE) 15 March 1986 (1986-03-15) abstract | 1-13 |
| A | ----- DATABASE WPI Section Ch, Week 198320 Derwent Publications Ltd., London, GB; Class B06, AN 1983-48592K XP002366343 & SU 786 086 B (LEVIN V I) 15 December 1982 (1982-12-15) abstract | 1-13 |
| A | ----- DATABASE WPI Section Ch, Week 197813 Derwent Publications Ltd., London, GB; Class B06, AN 1978-24638A XP002366344 & SU 496 757 A (BIOPHYSICS INST) 6 September 1977 (1977-09-06) abstract | 1-13 |
| A | ----- DATABASE WPI Section Ch, Week 197029 Derwent Publications Ltd., London, GB; Class K08, AN 1970-51313R XP002366345 & SU 245 214 A (BIOPHYSICS INST MIN OF HE) 11 February 1970 (1970-02-11) abstract | 1-13 |

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INTERNATIONAL SEARCH REPORT

International application No
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| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | DATABASE WPI Section Ch, Week 198951 Derwent Publications Ltd., London, GB; Class B06, AN 1989-376791 XP002366346 & SU 1 465 415 A (null) 15 March 1989 (1989-03-15) abstract ----- | 1-13 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

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|---|
| International application No PCT/EP2006/063466 |
|---|

| Patent document cited in search report | A | Publication date | Patent family member(s) | Publication date |
|--|----|------------------|---|--|
| US 4487738 | A | 11-12-1984 | NONE | |
| US 5037602 | A | 06-08-1991 | CA 2046639 A1 EP 0486497 A1 JP 4504174 T WO 9010937 A1 | 15-09-1990 27-05-1992 23-07-1992 20-09-1990 |
| WO 9707122 | A | 27-02-1997 | AU 7265096 A | 12-03-1997 |
| JP 01102397 | A | 20-04-1989 | NONE | |
| SU 1029559 | A1 | 30-11-1993 | NONE | |
| SU 760636 | A | 15-03-1986 | NONE | |
| SU 786086 | B | 15-12-1982 | NONE | |
| SU 496757 | A | 05-08-1977 | NONE | |
| SU 245214 | A | | NONE | |
| SU 1465415 | A | 15-03-1989 | NONE | |