



(51) International Patent Classification:
G21C 1/22 (2006.01) *G21C 3/54* (2006.01)
G21C 3/24 (2006.01)

(21) International Application Number:
PCT/EP2018/065989

(22) International Filing Date:
15 June 2018 (15.06.2018)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
17176462.4 16 June 2017 (16.06.2017) EP

(71) Applicant: SEABORG APS [DK/DK]; c/o Troels Schö-
nfeldt, Birkedommervej 86, 2. th., 2400 København NV
(DK).

(72) Inventors: SCHÖNFELDT, Troels; Birkedommervej 86,
2. th., 2400 København NV (DK). NIELSEN, Jimmy
Sølvsteen; Store Valbyvej 254, Gundsølille, 4000 Roskilde
(DK). PETTERSEN, Eirik Elde; Ved Linden 11, 2. th.,
2300 København S (DK). PEDERSEN, Andreas Vigand;
Victor Bendix Gade 16, 2. tv., 2100 København Ø (DK).
COOPER, Daniel John; Masnedøgade 28, 1. th., 2100
København (DK).

(74) Agent: AWA DENMARK A/S; Strandgade 56, Denmark,
1401 Copenhagen K (DK).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: MOLTEN SALT REACTOR

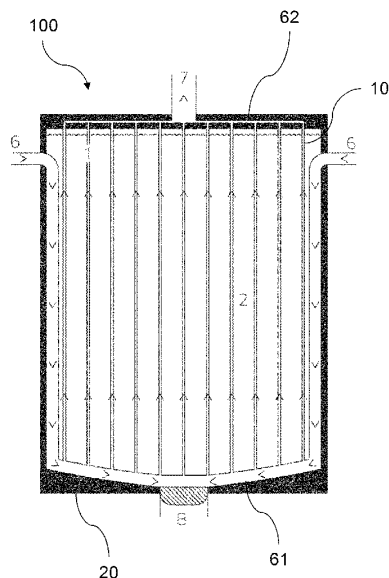


Fig. 1

(57) Abstract: A device adapted for producing energy by nuclear fission, the de-
vice comprising a core container of a core container material, which core container
encloses an inner tubing of an inner tubing material, the inner tubing and/or the
core container having an inlet and an outlet, the device further comprising a molten
fuel salt with a fissionable material and a molten moderator salt comprising at least
one metal hydroxide, at least one metal deuterioxide or a combination thereof and
a redox-element having a reduction potential, which is larger than that of the in-
ner tubing material or of the inner tubing material and the core container material,
wherein the molten moderator salt is located in the core container and the molten
fuel salt is located in the inner tubing, or wherein the molten fuel salt is located in
the core container and the molten moderator salt is located in the inner tubing. The
invention also relates to methods of controlling nuclear fission processes using the
device and to the use of a molten salt comprising at least one metal hydroxide,
at least one metal deuterioxide or a combination thereof and a redox-element for
moderating fission neutrons created in a fission reaction process.