

Title (en)

NANO-SCALE ENERGY CONVERSION DEVICE

Title (de)

VORRICHTUNG ZUR UMWANDLUNG VON NANOSKALIGER ENERGIE

Title (fr)

DISPOSITIF DE CONVERSION D'ÉNERGIE À L'ÉCHELLE NANOMÉTRIQUE

Publication

EP 3931857 A1 20220105 (EN)

Application

EP 20712762 A 20200221

Priority

- US 201916284979 A 20190225
- US 201916284987 A 20190225
- US 201916284967 A 20190225
- US 2020019230 W 20200221

Abstract (en)

[origin: WO2020176345A1] Embodiments relate to an apparatus for a nano-scale energy converter and an electric power generator. The apparatus includes two electrodes separated by a distance. The first electrode is manufactured to have a first work function value and the second electrode is manufactured to have a second work function value, with the first and second work function values being different. A cavity is formed by the distance between the first and second electrodes, and a nanofluid is disposed in the cavity. The nanofluid includes nanoparticles suspended in a dielectric medium. The nanoparticles have a third work function value that is greater than the first and second work function values. The relationship of the work function values of the nanoparticles to the work function values of the electrodes optimizes the transfer of electrons to the nanoparticles through Brownian motion and electron hopping.

IPC 8 full level

H01J 45/00 (2006.01)

CPC (source: EP IL)

H01J 45/00 (2013.01 - EP IL)

Citation (search report)

See references of WO 2020176344A1

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2020176345 A1 20200903; CA 3131282 A1 20200903; CA 3131367 A1 20200903; EP 3931857 A1 20220105; EP 3931858 A1 20220105; IL 285817 A 20211031; IL 285818 A 20211031; JP 2022521029 A 20220404; JP 2022523273 A 20220421; WO 2020176344 A1 20200903

DOCDB simple family (application)

US 2020019232 W 20200221; CA 3131282 A 20200221; CA 3131367 A 20200221; EP 20712762 A 20200221; EP 20712763 A 20200221; IL 28581721 A 20210823; IL 28581821 A 20210823; JP 2021572260 A 20200221; JP 2021572261 A 20200221; US 2020019230 W 20200221