

SPACE POWER SYMPOSIUM (C3)
Joint Session on Nuclear Power and Propulsion (5-C4.7)

Author: Mr. Oleg Aleksandrov
United States, oleg@aviastar.us

NUCLEAR ROCKET ENGINES AND OPERATING METHOD THEREOF

Abstract

Possible projects of the space interplanetary ships with engines using of nuclear energy and soil of planets without change of its structure. by application PCT/RU2013000655

The invention relates to the field of aerospace engineering and is intended to enhance the potential of rocket technology in interplanetary exploration. Rocket engines and methods for generating jet thrust during space flight when fuel can be obtained and processed from propellant-containing deposits, reservoirs, the atmosphere, etc. are known. In this case, propellants such as methane, hydrogen and an oxidant, namely oxygen, are obtained in order to power a chemical rocket engine. Otherwise, hydrogen alone is obtained in order to power a nuclear rocket engine. These devices and methods have a significant disadvantage in that the fuel reserves cannot be replenished in the event of landing on celestial bodies which are devoid of such deposits, and also in that the processes of obtaining the fuel, extracting (separating) same from rocks and ridding it of impurities are labour-intensive. The aim of the present invention is to simplify greatly the fueling of rockets on other celestial bodies and to use the surface material of said bodies irrespective of the composition and stratification thereof, for example in the form of ice, rock, regolith, dust, etc., to power a jet engine. For this purpose, the surface material of celestial bodies, irrespective of form or stratification, is used to power a rocket engine