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Title: Uranium-plutonium mixed fuel for the central african solar power station

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Can plutonium be used as a nuclear reactor fuel?

The plutonium is put into oxide form, mixed with depleted uranium oxide (mainly uranium-238 with about 0.2 percent uranium-235) to make a mixed oxide fuel ("MOX fuel"). Thus, it would appear that even without breeder reactors, plutonium can be useful as a nuclear reactor fuel.

Which uranium fuels are used in nuclear power reactors?

and uranium nitride pellet fuels have been used in small demonstration fast reactors. A few reactors still use uranium metal fuel. Figure 2. Natural and enriched uranium fuels for operating nuclear power reactors. 4.

What is materials science & fuel technologies of uranium & plutonium mixed oxide?

Materials Science and Fuel Technologies of Uranium and Plutonium Mixed Oxide offers a deep understanding of MOX properties for nuclear fuel that will be useful for performance evaluation. It also reviews fuel property simulation technology and an irradiation behavior model required for performance evaluation.

What is plutonium used for?

Plutonium has several industrial uses, particularly in the nuclear industry. Plutonium-239 is primarily used as a fuel to power nuclear reactors. In fact, it enters into the composition of MOX fuel - mixed uranium and plutonium oxide.

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MOX Mixed oxide fuel (MOX fuel) is nuclear fuel that contains more than one oxide of fissile material, usually consisting of plutonium blended with natural uranium, reprocessed uranium, or depleted uranium. MOX fuel is an alternative to the low-enriched uranium fuel used in the light-water reactors that predominate nuclear power generation. For example, a mixture of 7% plutonium and 93% natural uranium reacts similarly, although not ...

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Four He-bonded fuel pins containing uranium-plutonium mixed nitride pellets were fabricated for the irradiation tests in JMTR, aiming at understanding the irradiation behavior and demon ...

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