

What is the physical basis of nuclear energy?

Date : June 7, 2017

A fission reaction is when an atom's heavy nucleus (primarily, uranium and plutonium) splits into two nuclei fragments under the impact of neutrons. During the reaction the heavy nucleus splits into two ionized (positively charged) nuclei parts of similar mass. Coulomb repulsion force drives the nuclei fragments apart, which leads to the release of nuclear energy and its conversion into kinetic energy. Fragments travel in substance for short distances – microns, which is why when slowed down they heat a comparatively small amount of this substance. Isolating the nuclear chain reaction in the given amount of substance and combining it with a cooling system allows to harvest the released heat energy for later use, and this is what happens at a nuclear power plant.