

CLEARANCE OF SPACE DEBRIS BY USING ENERGETIC MATERIALS

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ABSTRACT

Space Debris clearing device using energetic material of the invention, i.e., the following launch and placement in or near orbit considered to be highly populated with debris, which is intended to clear the debris allowing the safe path and orbits for space assets. The initiation source of our device is laser source, the device is built of castable, energetic material said that being a charge of oxygen balanced, non-metallic crystalline, high explosive and polymer binders. Once in position near the debris, the device is remotely detonated and an impulse caused by the expanding detonation products, is imparted to the debris pushing them into a re-entry or earth escape trajectory.

Generally when a satellite reaches its expired stage it is also considered as one of the debris unless they do not break up. By using ESA's SMART – 1 spacecraft, the expired satellites are maneuver out of the commercially and scientifically valuable LEO and GEO zones. This method requires extra fuel specifically for this and adding to cost. Thus by comparing the above said method, the clearing device using energetic material method is so much better to clear all types of debris including expired satellites (debris).