

20th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE (D4)  
Innovative Concepts and Technologies (1)

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POTENTIAL OF LOW-TEMPERATURE PLASMA IN GAMMA-RAY SHIELDING IN THE  
ANTIMATTER PROPULSION SYSTEM

**Abstract**

Various researchers are working on antimatter propulsion systems around the world. These systems can help undertake far-off space missions and can increase our reach to the deeper space. It becomes quite essential to address the hazardous effects of gamma radiation when we think of such futuristic antimatter rocket propulsion systems. In such a system, the annihilation of matter and antimatter will emit high amounts of gamma radiation which can damage the costly and valuable machinery essential for the space mission to sustain. To shield the specific areas of the spaceship from gamma radiations, we propose an idea to attenuate the radiation using high-density low temperature inductively coupled plasma. We hypothesise that at very high density and frequency, the plasma would be able to attenuate much of the radiation. In this paper, we will test the ability and efficiency of inductively coupled plasma in attenuating gamma radiation using simulation tools.