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AN ANALYSIS OF POWER BEAMING RECEPTION IN LECTENNA DEVICES

Abstract

Power beaming has been an energy transmission idea with roots tracing back to the aspirations of Nikolai Tesla; providing countless modern applications from space solar, to wirelessly powered drones, to wireless medical implants. The LED rectifying antenna (LEctennaTM) acts as a step toward realizing this idea by providing a simple, cost-efficient device that can convert microwaves into DC current which is used to power an LED. In this paper, the science behind the LEctennaTM is analyzed to illuminate opportunities for optimizing its efficiency and gaining a deeper fundamental understanding of the underlying mechanics to progress the research of wireless power beaming. The effects of varying frequencies, components, and configurations were examined.