

Abstract Submitted
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Low Temperature Plasmas Generated and Sustained Indefinitely Using a Focused Microwave Beam REMINGTON REID, BRAD HOFF, AFRL, PAUL LEPELL, Leidos, AFRL TEAM — The Air Force Research Laboratory has constructed a device that can initiate a plasma discharge in a focused microwave beam and sustain it indefinitely. A 10 kW, 4.5 GHz beam is passed through a vacuum chamber outfitted with pressure windows that are transparent to 4.5 GHz radiation. The pressure windows are large enough in diameter to prevent any interactions between the beam and the metallic chamber. The entire experiment is housed inside an anechoic chamber to minimize reflections. This novel plasma source generates low temperature, low density plasmas that have no contact with the walls which minimizes contamination and sheath formation.

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