



MAGNONIC ELECTROMAGNETIC RADIATION SOURCES WITH HIGH OUTPUT POWER AT HIGH FREQUENCIES

[View U.S. Patent No. 11,817,242 in PDF format.](#)

WARF: P220031US01

Inventors: Jiamian Hu, Shihao Zhuang, Mingrui Li

The Invention

UW-Madison researchers have developed a fundamentally new type of mmW emitter, which only shows moderate power drop even at the 300 GHz frequency. The device architecture is a multilayer stack of metal, dielectric, and magnetic layers, and operates based on optical excitation of standing spin waves (magnons) in the magnetic layers which in turn produces mmW via magnetic dipole radiation. This device could be embodied as a single layer device, a super lattice structure, or as a phased array system.

Additional Information

For More Information About the Inventors

- [Jiamian Hu](#)

Publications

- [Shihao Zhuang, Jia-Mian Hu. A high-power magnonic millimeter-wave pulsed emitter. arXiv e-prints. 2021 Dec 29.](#)

Tech Fields

- [Semiconductors & Integrated Circuits : Components & materials](#)
- [Semiconductors & Integrated Circuits : Design & fabrication](#)

For current licensing status, please contact Michael Carey at mcarey@warf.org or 608-960-9867