

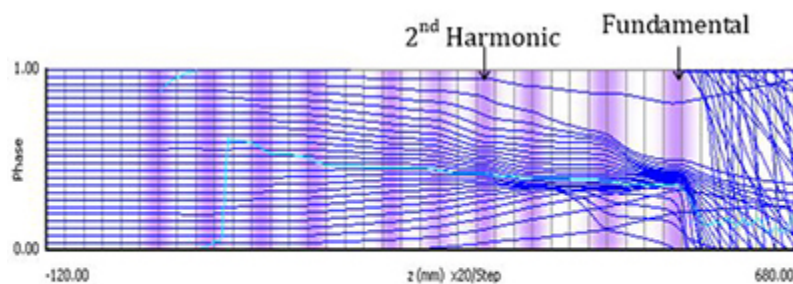
Docket #: S15-095

Multi-Frequency Klystron Designed for High Efficiency

Stanford researchers at SLAC have designed a multi-frequency klystron that achieves efficiencies higher than conventional single frequency klystrons and simultaneously delivers substantial power at higher harmonic(s). This invention will enable compact, high power, low weight multi-frequency microwave amplifiers with broad applications in scientific, commercial, and military industries.

Simulations have been completed showing overall efficiencies for an example tube with micropervience 2.0 in excess of 80% with about one third of the power being delivered to the second harmonic.

Figure



1D 2.0 μ K Klystron Simulation
80% efficient klystron, 1/3 of which is in the 2nd harmonic

Stage of Research:

Simulations completed showing overall efficiencies for an example tube with micropervience 2.0 in excess of 80% with about one third of the power being delivered to the second harmonic.

Applications

- Medical accelerators
- Scientific research

- Military/Radar

Advantages

- Higher efficiencies while also generating substantial usable power at higher harmonic frequencies
- Enables compact, high power, low weight multi-frequency microwave amplifiers
- Broad applications

Publications

- U.S. Published Patent Application 20160372296, "[Multi-Frequency Klystron Designed for High Efficiency](#)".

Patents

- Published Application: [20160372296](#)
- Issued: [9,697,978 \(USA\)](#)

Innovators

- Aaron Jensen

Licensing Contact

Evan Elder

Senior Licensing Associate

[Email](#)