



## TECHNOLOGY

# Joint Device for Capacitive Microwave Coupling

## OVERVIEW

It has already been demonstrated that for a number of microwave device applications devices made of metal-oxide superconductors such as  $\text{YBa}_2\text{Cu}_3\text{O}_7$  can have performance superior to those made of conventional metals such as Au or Cu. Some of the major obstacles to their implementation in a wide range of systems applications arise from (1) the costly and complicated cooling requirements for the superconducting components and (2) the difficulty in coupling of the low-temperature part of the circuitry comprising the superconducting components with the conventional room temperature circuitry.

Researchers at the University of Maryland, College Park, Center for Superconductivity Research, have proposed and experimentally verified that use of capacitive coupling with no mechanical contact can thermally isolate the low temperature part of the circuitry from the room temperature part while achieving satisfactory "unloaded" microwave coupling. A particular coplanar waveguide segment on the sample is used to enhance the coupling strength of the microwave radiation from probe-head to superconducting device of interest.

For more information, contact the Office of Technology Commercialization, 301-405-3947 or [otc@umd.edu](mailto:otc@umd.edu).

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## Additional Information

### INSTITUTION

University of Maryland, College Park

### PATENT STATUS

A U.S. patent, # 5,543,386, has issued

### LICENSE STATUS

Available for non-exclusive license

### EXTERNAL RESOURCES

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