



TECHNOLOGY

Rapid SAR Assessment System

OVERVIEW

Current SAR certification requires a time consuming robotic scan of an electric field probe inside a phantom model of the human head or body. This process is slow; the probe perturbs the fields being measured, and is expensive of time and manpower.

Researchers at the department of Electrical and Computer Engineering at the University of Maryland have developed a new technology that pertains to the optical measurement of the specific absorption rate (SAR) in flat, curved or anthropomorphic phantoms. The SAR that results in a phantom from a wireless device is currently a key parameter that must be measured to allow wireless devices to be certified for marketing by the FCC and to satisfy safety guidelines specified in international standards set by the energy deposition in the phantom produced by a wireless device.

This invention allows virtually instantaneous visualization of the spatial SAR distribution in the phantom without the need for any robotic scanning of electric field or temperature probes. The optical rapid SAR system avoids the time consuming robotic scanning currently used, does not perturb the SAR distribution being measured, and is very fast. The optical technique can be used with flat and anthropomorphic phantoms. It also provides a direct measurement of the SAR that is thermal based, rather than based on indirect measurement with electric field probes that must be calibrated, can drift, and perturb the SAR distribution. It also allows measurement right up to the inner surface of the phantom

In current testing, a wireless device is placed near to an anthropomorphic phantom loaded with a dielectric stimulant. The spatial SAR is determined by scanning an electric field probe in 3-D inside the stimulant fluid. The 1-g and 10-g peak SARs are assessed by averaging over volumes around the point of maximum SAR.

For additional information, please contact the Office of Technology Commercialization, University of Maryland College Park, via e-mail at otc@umd.edu or phone at 301-405-3947.

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Additional Information

INSTITUTION

University of Maryland, College Park

PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Information Technology

EXTERNAL RESOURCES

- [US Patent 9,182,434](#)

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