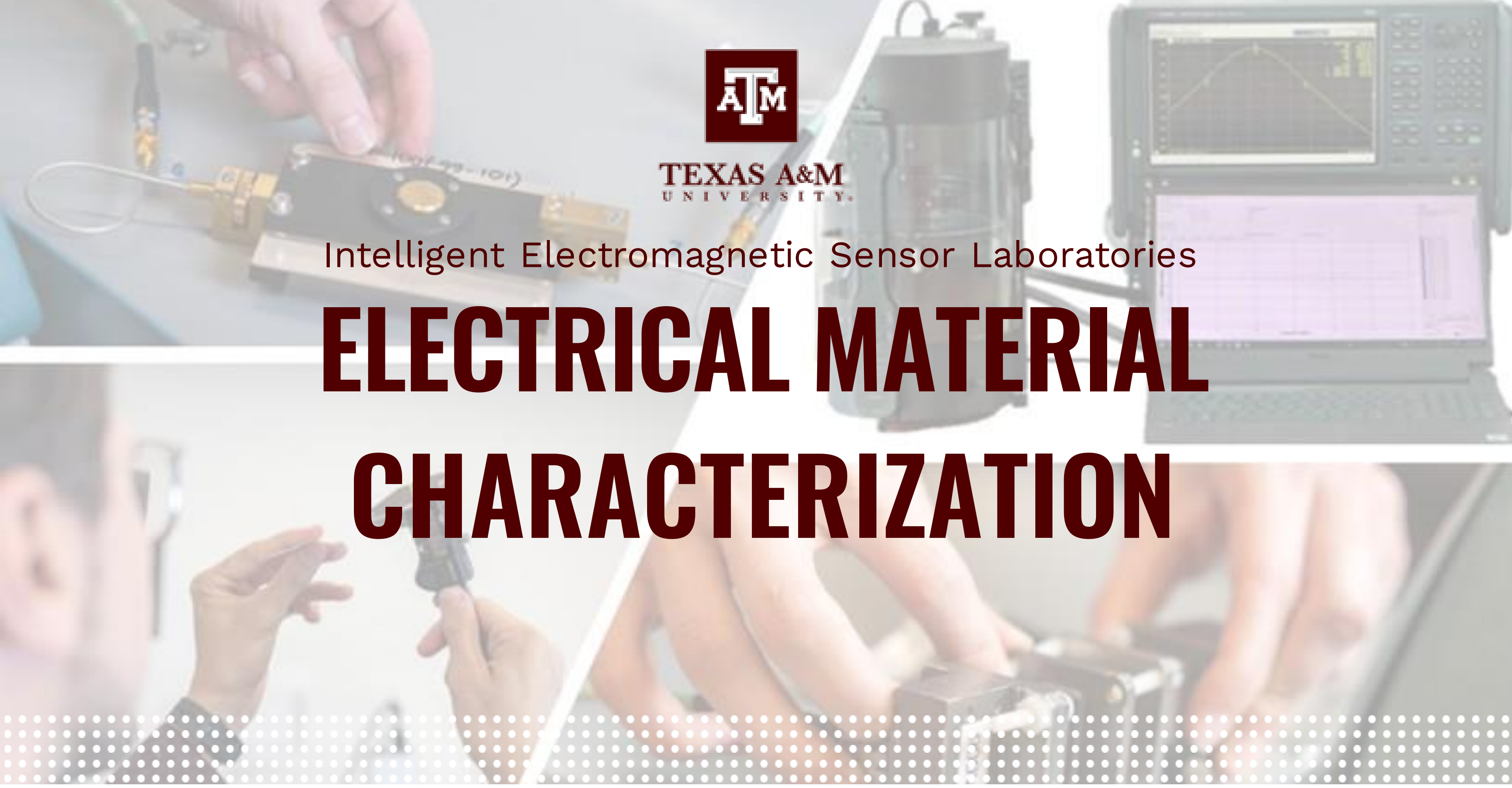

TEXAS A&M UNIVERSITY

Intelligent Electromagnetic Sensor Laboratories

ELECTRICAL MATERIAL CHARACTERIZATION

The iEMSL precisely measures fundamental electromagnetic properties of materials, including complex permittivity and shielding effectiveness. Our measurements utilize advanced vector network analyzers to ensure accurate extraction of critical material parameters.

Measurement Method	Frequency (GHz)	Tests	Sample Requirements
Transmission Line WR-90 Waveguide	8.2 - 12.4	✓ Shielding Effectiveness ✓ Dielectric constant for high loss material (using Nicholson-Ross-Weir Algorithm)	Length: 22.86mm Width: 10.16mm Thickness: 2 or 5mm
Split Post Dielectric Resonator (SPDR)	10	✓ Standardized complex permittivity (IPC 2.5.5.15 & IEC 61189-2-721 standards) ✓ Ideal for thin dielectrics	Length: > 45mm Width: 45 - 90mm Thickness: < 0.95mm
Fabry-Perot Open Resonator (FPOR)	10.2 - 52.2	✓ Wideband complex permittivity ✓ Built-in climatic compensation ✓ In-plane anisotropy	Diameter: 50 - 150mm Thickness: 15µm - 3mm

Beyond our standard services, we provide custom solutions tailored to unique material characterization needs. Reach out, and we'll strive to accommodate your request with our flexible, innovative approach.

iEMSL
INTELLIGENT ELECTROMAGNETIC SENSOR LABORATORIES

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