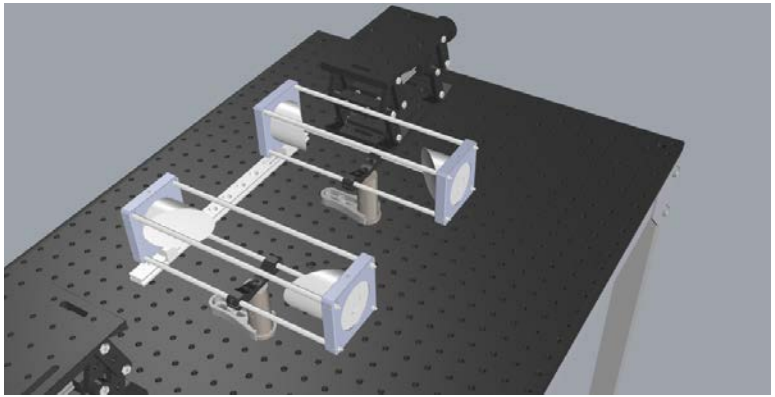
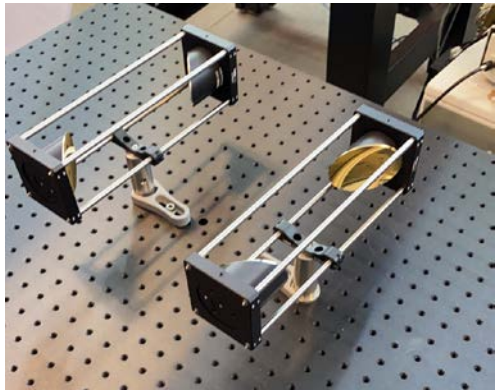
TERAPROBES INC

Automated Material Characterization and Imaging System: TeraMat-42E





Kubilay Sertel

sertel@teraprobes.com

https://www.teraprobes.com

Spot-focused, Automated, Free-space System Highlights

- Novel, automated, material characterization and imaging system using proprietary calibration that does not move the measurement setup
- Data processing and material property extraction software suite

System-level Performance Highlights:

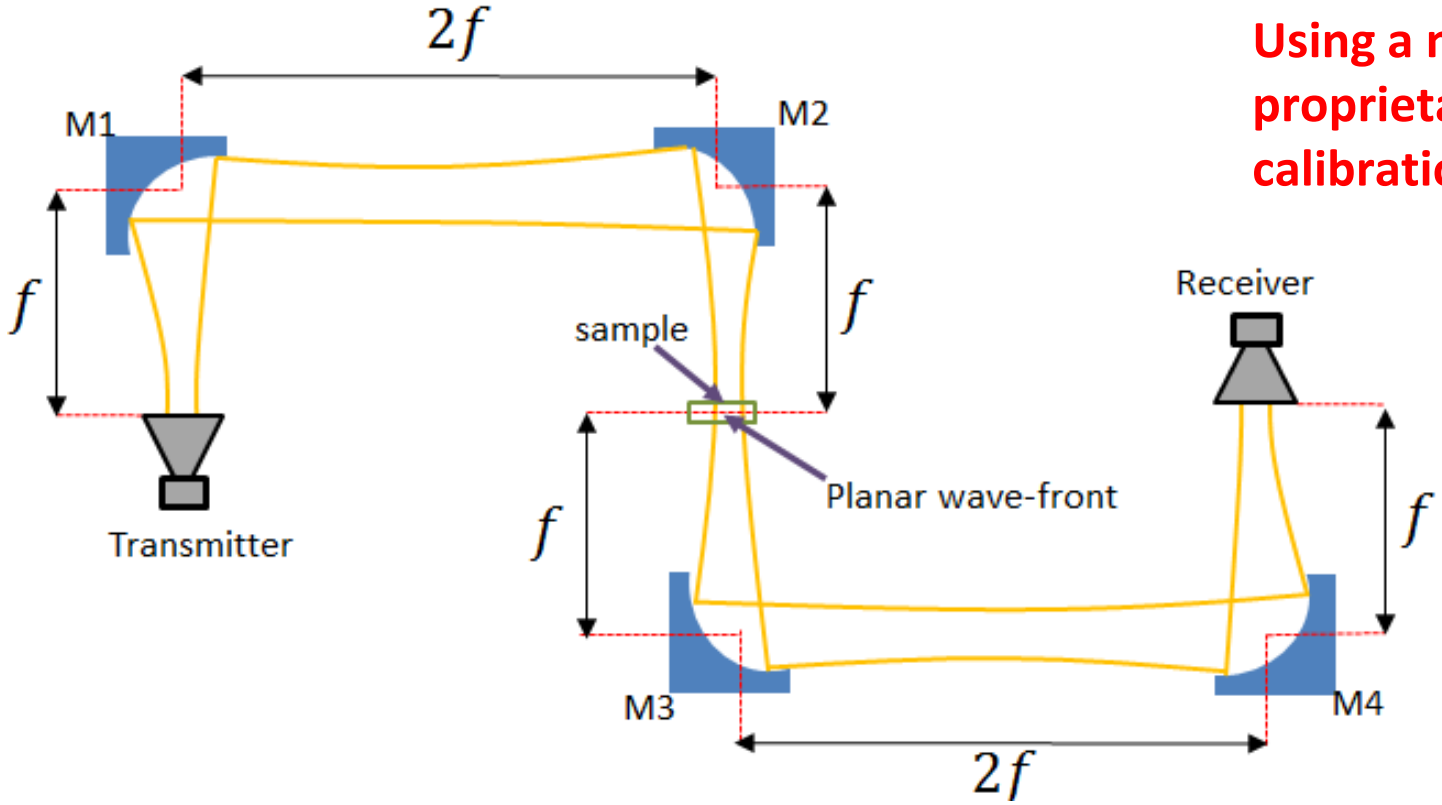
Our System	State of the Art
Small sample size (about 1 centimeter)	Large sample size (several inches)
2-dimensional Imaging for the entire sample	Single measurement per sample
Automated self-defined Calibration	Manual Calibration
Fully-automated (takes few minutes)	Manually operated (takes hours)

TeraProbes TeraMat-42E System Highlights

- Non-contact, non-destructive
- Self-calibrating (via unique and tracable calibration)
- No user experiece needed!
- Consistent, repeatable results... first time, every time
- Automation control software suite

- Pure polarization control
- 2-dimentional vector (amplidute and phase) imaging capability
- Rotational stage for anisotropic materials or textured sample panels
- Automated calibration using 4000+ measurement points foreach frequency
- 100s of data points per sample per frequency
- Data processing and material property extraction software suite

Illustration of the Spot-focused System



Using a new proprietary calibration method

System Performance for TPO - Sample 1

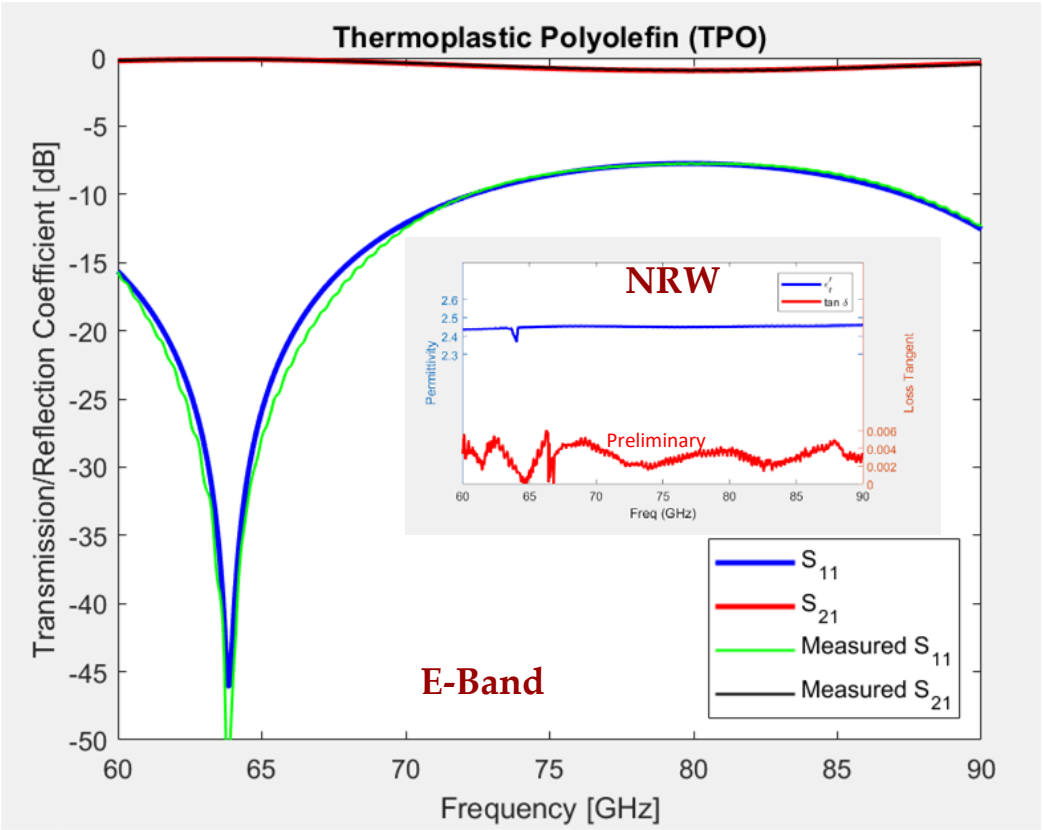
Thermoplastic polyolefin (TPO)
Sample-1

3.02mm thick TPO

Estimates:

Permittivity= 2.42
Loss tangent= 0.0035

4″×6″ panel



System Performance for TPO – Sample 2

Thermoplastic polyolefin (TPO)

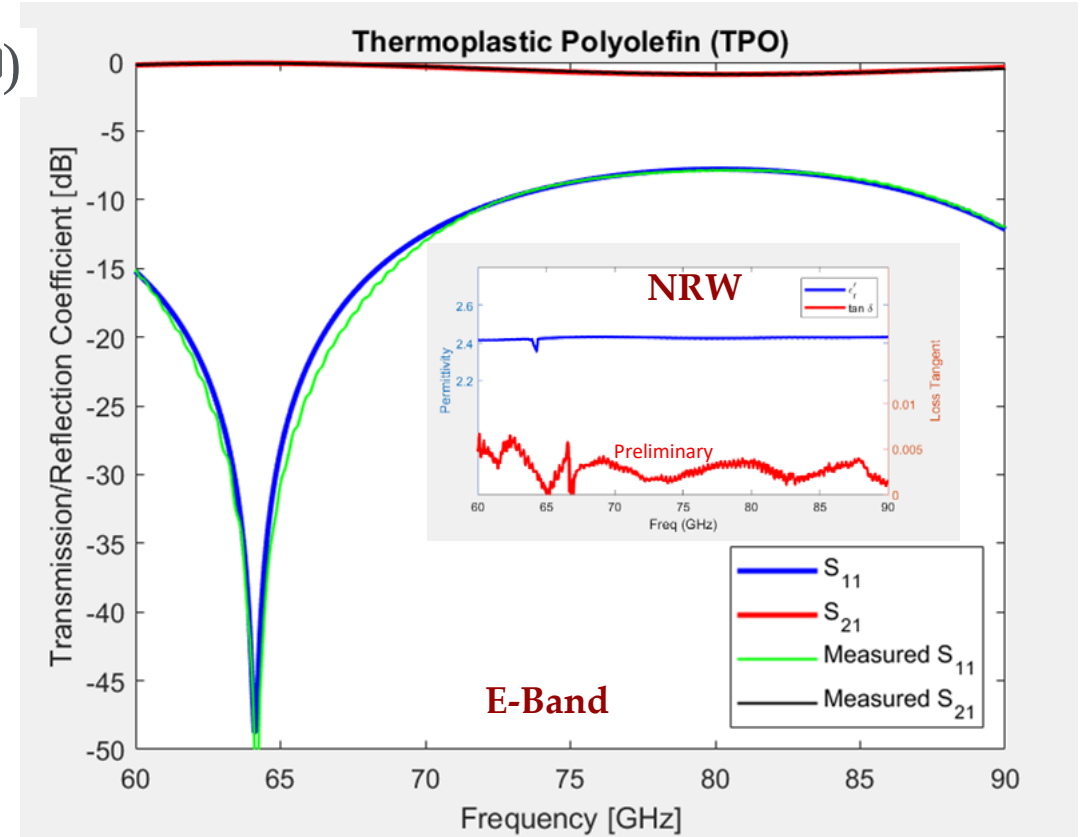
Sample-2

3.02mm thick TPO

Estimates:

Permittivity= 2.40
Loss tangent= 0.0025

4″×6″ panel



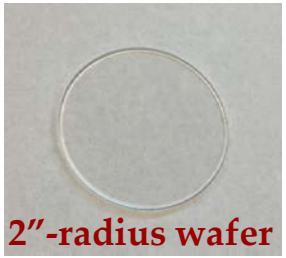
System Performance for Fused Quartz

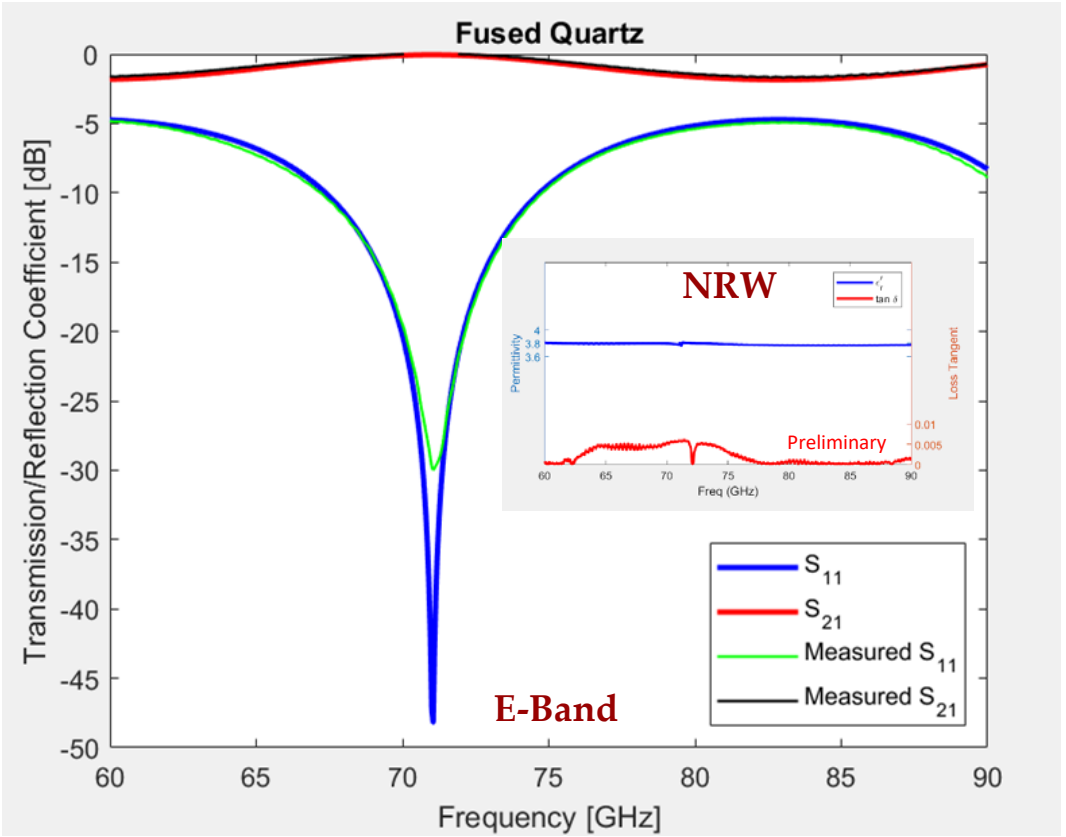
Fused Quartz

3.25mm thick Quartz

Estimates:

Permittivity= 3.80
Loss tangent= 0.002





System Performance for High Resistivity Silicon

High Resistivity Silicon (HRSi)

1.063mm thick HRSi

Estimates:

Permittivity= 11.70
Loss tangent= ~0.01