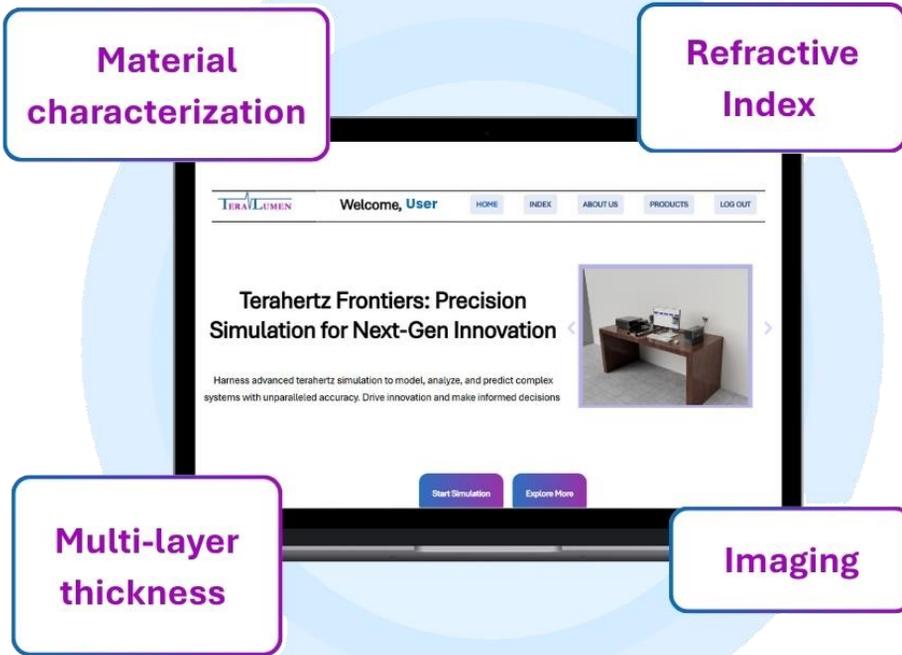


## #1<sup>st</sup> LearnTHz Software



**LearnTHz** empowers users to learn, explore, and analyze measurement techniques using Terahertz (THz) signals with ease. This simulation platform guides users in identifying the most effective methods for measuring the dielectric properties of non-conductive materials. With LearnTHz, users can visualize THz signals and perform realistic experimental simulations.

### **Purpose of LearnTHz :**

- LearnTHz is a best fit for areas like THz spectroscopy and NDT.
- Researchers can simulate and analyze materials virtually.
- Students can learn THz basics through visual tools.

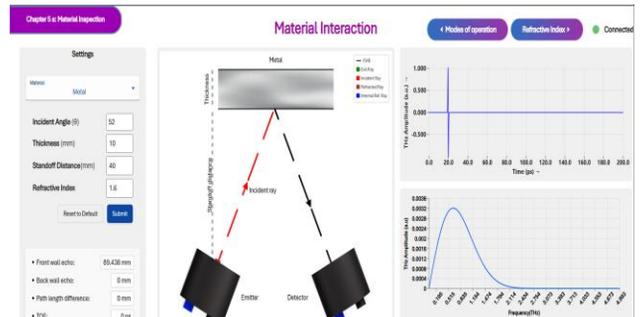
### **Key features :**

- THz fundamentals and Spectroscopy concepts.
- Material interaction study, Thickness analysis and Imaging.
- Refractive index – Time spectra, Frequency spectra, Refractive index, absorption coefficient and Transfer.
- Latest application insights.

# From Equation to Simulation

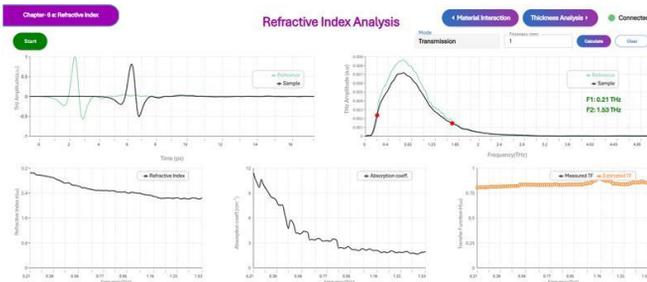
## Material Interaction Study

Observe how different materials interact with THz waves by comparing their absorption and transmission. Identify internal changes like defects or moisture, helping researchers and students explore material-specific THz spectral fingerprints.



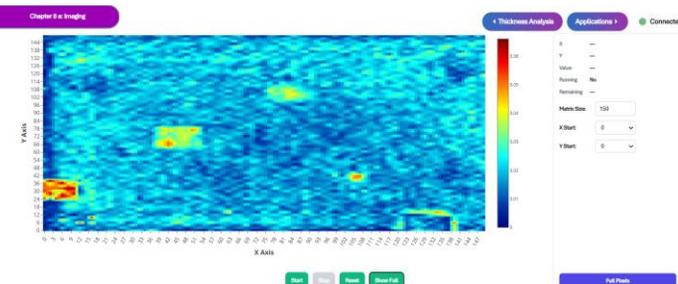
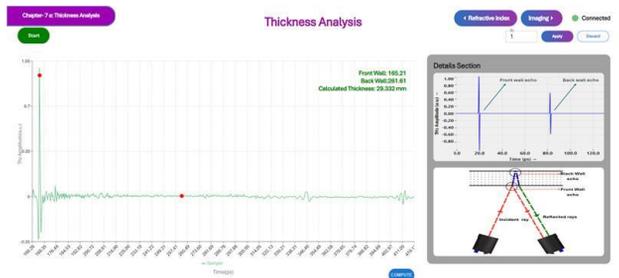
## Refractive index analysis

The refractive index explains how Terahertz (THz) waves reflect and refract when it interacts with a material. This helps users to understand dielectric properties of a composite or polymer material.



## Thickness analysis

THz pulses reflect from each layer. The timing between each pulse depends on refractive index and thickness, letting users measure individual layer thicknesses and estimate material dielectric properties quickly and accurately.



## Imaging

THz imaging maps amplitude and depth when waves pass through or reflect from material interfaces. Unlike X-rays, non-ionizing THz reveals hidden layers, internal structures, and defects invisible to the eye.