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Applications of femtosecond Laser-Induced Breakdown Spectroscopy

# What Femtosecond LIBS is

## LIBS

### LIBS ablates a material with a high-energy laser pulse, causing a small amount to form into a plasma. As the plasma condenses, it emits photons characteristic of the re-formation of compounds, which can be used to reconstruct the constituent elements.

### It is considered non-destructive (due to the small volume ablated) and can be employed on a variety of samples with little or no preparation.

## Femtosecond-pulse LIBS

### LIBS is limited by the formation of the plasma via ablation. If the energy is delivered over too long a period, the sample melts instead of ionizing.

### Femtosecond pulses deliver the energy more quickly, meaning that there is less time for phononic propagation to the rest of the material, resulting in less melting.

# Applications of Femtosecond-pulse LIBS

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