

## PHYSICS

### Advanced Edit

LIBS is an elemental analysis technique that is based on the excitation of atoms located on ~~the~~ ~~sample~~ ~~material's~~ surface; ~~this excitation is induced~~ by focusing a pulsed laser beam ~~on the surface~~. ~~The~~ ~~M~~ ~~material~~ ~~can be ablated in~~ concentrations ranging from ~~ng~~ ~~nanograms~~ to ~~ug~~ ~~micrograms~~ ~~can be ablated by using~~ this technique, ~~producing~~ ~~generating~~ a microplasma ~~that~~ ~~which~~ can be characterized by several ~~of~~ parameters. After the ~~creation~~ ~~generation~~ of the ~~micro~~plasma, electromagnetic radiation is emitted ~~owing to~~ ~~under~~ several processes, namely, ~~the~~ ~~bremss~~ ~~strahlung~~ ~~process~~, recombination, and de-excitation of atoms and ions ~~occurring inside~~ ~~in~~ the laser plume [1]. ~~The~~ ~~D~~ ~~e~~ ~~de~~ ~~excitation~~ of atoms and ions leads to light emission ~~at~~ ~~with~~ ~~a~~ characteristic frequency, which can be used ~~for~~ ~~in~~ both ~~the~~ qualitative and ~~the~~ quantitative determinations.

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Comment [A1]: Please provide the full form of this abbreviation, since it appears to be its first mention in the main text.