

PHYSICS

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Premium Edit

Laser-induced breakdown spectroscopy (LIBS) is an elemental analysis technique that ~~is involves focusing a pulsed laser beam onto the surface of a material specimen to based on the excitation of excite~~ atoms located on the ~~sample~~ surface, ~~by focusing a pulse laser beam. The focused laser beam ablates the material~~ in ~~Material~~ concentrations ranging from ~~ngnanograms~~ to ~~μgmicrograms~~, ~~can be ablated by this technique producing generating~~ a microplasma ~~plume which that~~ can be characterized by several ~~of~~ parameters. After the ~~plume is generated~~ ~~creation of the plasma~~, electromagnetic radiation is emitted ~~as result of under~~ several processes, ~~namely~~, ~~the bremsstrahlung process~~, recombination, and de-excitation of atoms and ions ~~occurring inside~~ the laser ~~ablated~~ plume [1]. ~~In particular, the De~~-excitation of atoms and ions leads to ~~light~~-emission ~~of light at with a~~ characteristic frequency, which can be used ~~for in~~ both ~~the~~ qualitative and ~~the~~ quantitative ~~determinations~~.

**Comment [A1]:** When units of measurement are not preceded by a numeral, they should be spelled out.

**Comment [A2]:** Please check my insertion here; I understand that "microplasma" refers to the plume that is known to be generated in LIBS. Further, by making this insertion, the use of "laser plume" in a later sentence becomes less abrupt.

**Comment [A3]:** If the three processes given here are the only three processes that result in electromagnetic radiation, then please retain this word. However, if these processes are three out of many other processes, then please revise this part as "for example."

**Comment [A4]:** Please specify what is being determined here. Do you mean "determinations of trace elements"?