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**Application of Laser Induced Breakdown Spectroscopy to Monitor Rare Earth Ions in Glass Matrix** PRAKASH SHARMA, MICHAEL CARTER, AKSHAYA KUMAR, Department of Physics, Tuskegee University, Tuskegee, Alabama — The Laser Induced breakdown spectroscopy (LIBS) is a real time online technique that can be used to monitor the concentration of rare earth ions in amorphous glass matrix. This study has significant application in the glass industry where the composition of the glass can be monitored in real time using LIBS technology for quality control. The Eu3+ ions doped silicate glasses were developed via sol gel method. The glasses of varying molar percentages of Eu3+ (0.02, 0.05 and 0.08 mole percent), were prepared to study the effect of variation in concentration of Eu3+ ions on the LIBS signal and to calculate its limit of detection (LOD). The spectral assignment of the observed LIBS spectrum has been made. In order to find the maximum signal to noise ratio, we also recorded the intensity of LIBS signal for various integration start delay (ISD) time at a constant power of (pulsed Nd: YAG) laser. The ocean optics LIBS 2500plus spectrometer along with a Q switched Nd:YAG laser (Quantel, Big Sky) were used to record the LIBS spectrum.

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