**A Gamma-ray based friendly approach for non-destructive inspection of wood**

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*Abstract:* The COVID-19 pandemic has forced the educationists and researchers to opt the online mode of imparting education and performing research. Monte Carlo simulations serve as an efficient tool to continue education and research from the home environment. The present paper focuses on the importance of Monte Carlo simulations in the fields of wood science and technology. This work is based on the use of gamma-rays for non-destructive assessment of some common woods to report the parameters (like moisture content and bulk density), which are considered as a quality indicator for wood industry. The FLUKA Monte Carlo code has been explored for this purpose whose validation is done with the laboratory findings and a strong correlation has been found between simulations and experimental results. Moreover, this study also gives some insight about radiation shielding competency, to keep the radiations at permissible level, of naturally available woods especially for emergency conditions. It has been concluded that FLUKA based simulation is a convenient and inexpensive method for wood characteristics particularly whenever it is hard to set-up the desired laboratory arrangements.

*Keywords:Gamma-ray densitometer, Wood characteristics, Monte Carlo Simulations*