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Forgery at the Snite Museum of Art? Improving AMS Radiocarbon Dating at the University of Notre Dame[1] LAURA TROYER, Greenville University, CONNOR BAGWELL, TYLER ANDERSON, ADAM CLARK, AUSTIN NELSON, MICHAEL SKULSKI, PHILIPPE COLLON, University of Notre Dame — The Snite Museum of Art recently obtained several donations of artifacts. Five of the pieces lack sufficient background information to prove authenticity and require further analysis to positively determine the artwork's age. One method to determine the artwork's age is radiocarbon dating via Accelerator Mass Spectrometry (AMS) performed at the University of Notre Dame's Nuclear Science Laboratory. Samples are prepared by combustion of a small amount of material and subsequent reduction to carbon into an iron powder matrix (graphitization). The graphitization procedure affects the maximum measurement rate, and a poor graphitization can be detrimental to the AMS measurement of the sample. Previous graphitization procedures resulted in a particle current too low or inconsistent to optimize AMS measurements. Thus, there was a desire to design and refine the graphitization system. The finalized process yielded physically darker samples and increased sample currents by two orders of magnitude. Additionally, the first testing of the samples was successful, yet analysis of the dates proved inconclusive. AMS measurements will be performed again to obtain better sampling statistics in the hopes of narrowing the reported date ranges.

[1]NSF and JINA-CEE

Laura Troyer
Greenville University

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