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MEMORANDUM

December 29, 1992

TO: Dr. Al Goodman
Office of Naval Research, Electronics Division

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MAR 16 1993

REGARDING: Final Progress Report
ONR Grant No. N00014-91-J-1785

An accelerator mass spectrometry (AMS) facility has been developed at the Ion Beam Modification and Analysis Laboratory (IBMAL) at the University of North Texas (UNT) in conjunction with the 3 MV Tandem Accelerator. The computer controlled AMS instrument allows automatic mass scans of stable isotopes in solid materials using a new ultra-clean, low sample contamination ion source. The AMS instrument allows molecular interference-free mass scans to be obtained with a higher sensitivity than Secondary Ion Mass Spectrometry (SIMS) for many elements. The new low sample contamination, microbeam, raster-scanning, depth-profiling ion source recently completed should allow sensitivities of ppt (1 part in 10^{12} or 10^{13} atoms / cm^2) for almost any element in the periodic table as well as secondary electron imaging of a sample. Raster scanning and depth profiling capabilities should be available by the first quarter of 1993. Microbeam capabilities should be available by the second quarter of 1992.

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