

Novel X-ray Source for X-ray Nanolithography

September 29 2004

JMAR Technologies, Inc. today announced that its Research Division has received \$2 million in funding under its previously announced \$34.5 million Department of Defense Contract (DARPA Contract). These funds apply to costs already incurred and recognized as part of the Company's ongoing refinement of its [laser produced plasma \(LPP\) X-ray source for X-ray nanolithography applications](#).

JMAR has been developing its LPP source technology used in X-ray nanolithography for semiconductor processing under a multi-year contract with the DoD. In conjunction with its ongoing work for the DoD, JMAR is developing additional applications for this unique technology by producing different soft X-ray wavelengths optimized for various applications, including X-ray Microscopy and X-ray Nano Probe instrumentation.

"It is exciting to see that this DARPA inspired technology is more generally and broadly applicable than initially envisioned," said Ronald A. Walrod, CEO of JMAR. "The X-ray source itself is ideal for X-ray microscopy of cells and polymers and expanding the LPP source technology enables the production of the X-ray Nano Probe, a versatile tool for nanotechnology materials and process development. Furthermore, the high brightness lasers developed for the LPP source are now finding applications in laser crystal conditioning and advanced microscope illumination."

The remaining funding of \$3.4 million of the \$34.5 million DARPA

Contract will enable the Company to improve the versatility and efficiency of its LPP source.

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