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10 THE DAILY NORTHWESTERN

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## NU researchers on power trip over laser findings

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Miniature lasers could be shooting through laboratories everywhere due to Northwestern researchers' discoveries of new methods of producing the high-powered beams.

Manijeh Razeghi, professor of electrical engineering and computer science, announced the findings Wednesday at the annual meeting of the Lasers

and Electro-Optic Society in San Jose, Calif.

Researchers found that creating the lasers on aluminum-free quantum wells would be more efficient than in gas chambers or with computer chips that contain aluminum. Such chips have short lives and cannot be used in a variety of settings.

"This finding should lead to a whole new generation of commercial high-powered lasers that will be reliable,

long-lasting and precise," Razeghi told University Relations.

With one previous method of creating lasers, a diode outside the chamber would excite the gas, which would release photons that bounce in the chamber, producing a beam of light. However, this method led to overheating of the chamber surface.

The discovery of creating lasers on aluminum-free chips will eliminate the risk of defects in the laser, an effect of

the use of chips containing aluminum. The new lasers also will be more powerful.

"On the basis of these experiments, the problems of high-powered lasers should be solved within the next six months," Dmitry Garbuzov told University Relations. Garbuzov, a visiting scholar from the Russian Academy of Sciences, worked with Razeghi on the project.