

# The Huntsville Times

## Discovery viewed as breakthrough in miniature lasers

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Northwestern University researchers say they have discovered a way to make high-powered lasers on a computer chip, a breakthrough that should lead to a new generation of miniature lasers.

Until now, the only means of making high-powered lasers, such as those used in medicine, information storage and high-definition television and for military applications, has been either in the familiar long gas chambers or with computer chips that contain aluminum. But these aluminum-based chips have very short lives and can be used only in limited applications.

The new aluminum-free quantum wells that produce the lasing are made from a combination of elements known as indium gallium arsenic phosphide and are made under pressure in a process known as metalorganic chemical vapor deposition.

"This finding should lead to a whole new generation of commercial high-powered lasers that will be reliable, long-lasting and precise," said Manijeh Razeghi, director of the Center for Quantum Devices at Northwestern.

Collaborating with Razeghi in developing the chip was Dmitri Garbuzov, visiting scholar from the Russian Academy of Sciences.

Previously, the only method for producing the lasers on a chip had involved the use of aluminum gallium arsenide. But the aluminum content led to defects in the original construction and sudden failures in operation.

### Missile & Space Digest

#### BMD cutback eyed

The Ballistic Missile Defense Organization may not purchase four additional Topaz 2 space nuclear reactors from Russian for \$21 million because of budget problems, *Space News* reports.

The United States purchased two reactors last year for \$13 million. The BMDO budget for 1994 was hit with a \$1 billion cut from the Clinton administration's \$3.8 billion request for missile defense.

The administration decided to also cancel a U.S. nuclear reactor development program called SP-100.