

Metallicum acquisition is big deal for a small technology

BY KEVIN ROBINSON-AVILA | NMBW STAFF

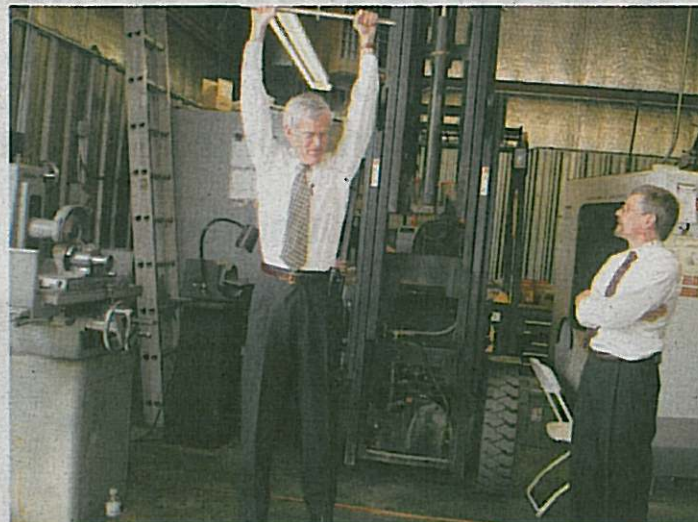
Nano-structured metals could be the wave of the future for planes, trains and automobiles, not to mention dental implants and medical prosthetics.

That wave might be much closer, due to Manhattan Scientifics' acquisition of Santa Fe-based Metallicum Inc. Metallicum uses break-through technology from Los Alamos National Laboratory to produce nano-structured metals that are far stronger but much lighter than normal metals.

Manhattan purchased Metallicum for an undisclosed price. It will produce the new metals and devices at an Albuquerque factory, where Manhattan announced the deal on July 2 as U.S. Sen. Jeff Bingaman, D-NM, and U.S. Rep. Tom Udall, D-NM, looked on.

"I believe the merger of Manhattan Scientifics with Metallicum will have a very positive effect on New Mexico and the country," Bingaman said at the event. "The lightweight nano metals the company will produce will have the potential to revolutionize a whole range of industries, from transportation to health care."

Terry Lowe, Metallicum president, formed the company in 2001 after obtaining a license from LANL where he had worked as deputy director of the Materials Science and Technology Division. Lowe helped develop nano-structured metals under a U.S. Department of Energy project to commercialize scientific discoveries from Russia, Lowe said.



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(R) U.S. Sen. Jeff Bingaman hangs from a "nano wire" made with Metallicum's technology as Terry Lowe watches. (Above) The nano wire, up close.

"After the fall of the Soviet Union, we worked with Russian scientists to develop this and other technologies," Lowe said. "I was involved from the start."

Nano metals are formed with a rapid spinning technique that breaks down the component crystals in metal.

"We use a highly focused shearing, or spinning motion," Lowe said. "All metals are made up of many tiny crystals, like sand on a beach, so when we spin them, the crystals start to break up and subdivide. We end up with a large quantity of much smaller crystals that have been reduced in size by 500 to 1,000 times."

As the crystals get smaller, they get stronger. And, unlike most other materials that become less elastic when reduced, the

ductility of nano metals actually increases, allowing them to stretch more without breaking. That makes them ideal for engineering and paves the way for the new material to replace normal metals in a wide variety of products, Lowe said.

As a subsidiary of Manhattan Scientifics, Metallicum will seek to market nanotitanium dental and medical implants. The company also plans to market nano metals for use in airplanes, cars and possibly rail industries, Lowe said.

"We can make lightweight metals that are stronger than conventional metals, shaving thousands of pounds from airplanes and hundreds of pounds from automobiles," Lowe said.

Metallicum has a joint venture in place with

Albuquerque-based metal manufacturer Danlin Products Inc. to make nanotitanium-based products. Metallicum will help Danlin expand its factory near the University of New Mexico from 10,000 to 13,000 square feet to increase production, Lowe said.

The Metallicum acquisition breathes new life into Manhattan Scientifics, a publicly traded investment firm that has significant stakes in two other New Mexico companies — Novint Technologies Inc. and New Mexico Software. It maintains offices in Canada, New York and New Mexico.

Manhattan's stock has spiraled downward since the dot.com crash in 2000, from above \$8 per share before the crash to a penny a share prior to the Metallicum purchase, said Manhattan founder and chairman emeritus Marvin Maslow. But the company has overhauled its management team with a new CEO and board members and it recently raised \$1.7 million in capital. It also bought back and canceled 43 million of its own shares.

"We've reinvented ourselves," Maslow said. "The investors who participated in the capital raise are ecstatic because they're up 450 percent. Stock is now trading at \$4 per share with the Metallicum acquisition."

Manhattan CEO Manny Tsoupanarias said the Metallicum purchase was a no-brainer.

"It was low-hanging fruit that will create real value for Manhattan Scientifics," he said.

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