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IRONWOOD DESIGNS TAPS SATOP TO TEST PRODUCTION THEORY

NASA Outreach Program Helps Small Business Save Time & Money

SANTA FE, N.M. (Feb. 11, 2011) -- Steven Zawalick, Owner of IronWood Designs, a California woodworking design and consulting company, prides himself in creating a work environment conducive to unique ideas, methods, and products. From airbrushing to welding, Ironwood combines physics, materials and knowledge to form solutions.

One unique product IronWood created is "BLOXYGEN" (www.bloxygen.com), an inert gas preservative used to help keep oil-based varnish and paints from skinning over. However, due to size limitations in the BLOXYGEN aerosol can, Zawalick was concerned about how much inert gas was provided. Large cans are difficult and costly to manufacture, so they were being forced to use smaller, multi-part steel containers, which also are costly to produce and their delivered volume is low.

Zawalick had a theory: if activated charcoal was inserted into the container, it would adsorb the gases and, in essence, provide a system that they could use to deliver more molecules of gas within their pressure limit per container. He believed that the fill duration would have to be extended and that there may be some issues with high temperatures. Before heading in production of a new canister, Zawalick needed to test this theory so he decided to pursue help from the NASA-funded [Space Alliance Technology Outreach Program \(SATOP\)](#).

SATOP provides free engineering assistance to small businesses with technical challenges through the expertise of the program's Alliance Partners, which consist of 25 aerospace companies and universities involved in the U.S. space program. Zawalick

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contacted Naomi Engelman, SATOP New Mexico director, who paired him with Dr. Chris Clausen with the University of Central Florida, a SATOP Alliance Partner in Orlando.

Dr. Clausen believed that the Zawalick's idea had merit. He conducted calculations to determine the increase in gas (volume/weight) in the can by adding the charcoal. Dr. Clausen then prepared several pressure cylinders with fittings that allowed him to load graphite and pressurize the vessel with argon up to 160psia. The gas was then vented through a wet test meter to measure the volume that is contained in the cylinder. Various loading of graphite and different grades were tested so as to optimize the gas loading.

While Dr. Clausen was able to conclude that the Requestor's theory did actually work, Zawalick ultimately decided not to pursue the new canister because it would be too cost prohibitive to implement.

"We needed a sound evaluation of a proposed new method to deliver more product for less cost, however we didn't have the expertise required to conduct this evaluation or the finances to pay a private firm to do it," said Zawalick. "Even though Ironwood didn't end up incorporating the results into our product line, SATOP's assistance provided valuable information that allowed me to make an informed business decision which saved time and money."

"Sometimes SATOP helps an inventor or small business decide when an idea not worth pursuing," said Engelman. "We were pleased to be able to test Ironwood's theory and, using sound scientific data, help Steve determine not to go forward with something that was not financially viable."

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About SATOP

The NASA-funded Space Alliance Technology Outreach Program (SATOP) provides small businesses with free technical assistance through the expertise of the U.S. Space Program, as well as aerospace contractors, NASA field centers, universities and colleges. These organizations join SATOP as Alliance Partners and donate time and expertise to help solve technical challenges for small businesses. SATOP is operated as a collaboration between four regional centers: the Technological Research & Development Authority in Melbourne, Fla.; the Regional Development Corporation in Santa Fe, N.M.; the CenterState Corporation for Economic Opportunity in Syracuse, N.Y.; and the Bay Area Houston Economic Partnership in Houston, Texas. For more information about SATOP, or to request technical assistance, please visit www.SpaceTechSolutions.com.