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FOR IMMEDIATE RELEASE

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DSM Somos® WaterShed® Resin Used by Medical Research Team for Modeling Human Lungs

Elgin, Illinois, September 15, 2005 —DSM Somos®, a leading developer of stereolithography (SL) resins for rapid prototyping and manufacturing, has provided a unique material for helping researchers at the University of Delaware model the structure and performance of human lungs. It is hoped that the research project, funded by Philip Morris, will be used to create new medical delivery systems for illnesses such as asthma and, potentially, new types of drugs such as a needle-less form of insulin.

Under the direction of Dr. Ajay L. Prasad, the University is attempting to document the details of the breathing process and, specifically, how air travels once inside the lungs. To create the models of the lungs themselves, the research team turned to the DSM Somos resin, WaterShed® 11120.

"The basic geometry of the conducting portion of the lungs, though fairly static from one human to the next, is quite complicated," says graduate student researcher Frank Fresconi. In addition to being able to capture a high degree of structural detail, the lung models also need to be transparent so as to allow lasers to illuminate the flow of liquid through the different regions while a high-resolution camera simultaneously captures the process on film.



Above: A stereolithography model of a human lung made out of Somos WaterShed® 11120 highlights fluid flow in order to help predict behavior of particles entering the lungs.

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DSM Somos® WaterShed® 11120 was the resin of choice to create the models. WaterShed's transparency allows excellent visualization of the fluid flow needed for data gathering and, as an added benefit, the resin's water resistant properties help the models tolerate extended periods of fluid flow during experiments. WaterShed's ABS-like properties, including high stiffness and high elongation at break, also allow for the different parts of the model to be snapped together. The final model was created from a number of different pieces joined together to create the highest degree of anatomical detail possible.

University researchers have been pleased with the results. "Without a stereolithography model allowing us to create an exact replica of the conducting region of the lungs—and the performance properties of Somos WaterShed in particular—we would not be able to execute this experiment as designed," says Fresconi. "We're thrilled with the data being collected."

The research project is slated to go through several more phases beyond the data collection before final results are published.

More About DSM Somos®

DSM Somos is a leading materials supplier to the rapid prototyping industry, providing stereolithography liquids used for the creation of three-dimensional models and prototypes directly from digital data. Somos' patented ProtoFunctional® materials are used by a variety of industries, including automotive, aerospace, medical and telecommunications. Somos' corporate office is located at: 1122 St. Charles Street, Elgin, Illinois, USA, Tel. +1-847-697-0400, Americas@dsmsonos.info . For more information on DSM Somos® in Europe: Fax. +39 06 9871694, Europe@dsmsonos.info

DSM Somos (www.dsmsonos.com) is an unincorporated subsidiary of DSM Desotech Inc. (www.dsmdesotech.com)—a world leader in the development of UV-curable materials—and a member of the global DSM family.

About DSM

DSM (www.dsm.com) is active worldwide in life science products, performance materials and industrial chemicals. The group develops, produces and markets innovative products and services that are designed to raise the quality of life. DSM's products are used in a wide range of end-use markets and applications, including human and animal nutrition and health, cosmetics,

pharmaceuticals, the automotive industry, coatings, the construction industry and the electrics & electronics market. The group has annual sales of around €8 billion and employs about 24,000 people worldwide. DSM is a leading world player in many of the markets in which it operates and has plants and facilities on every continent. The company is headquartered in the Netherlands.

More About DSM Somos® Materials

What is stereolithography?

Stereolithography (SL) permits the rapid creation of 3D pieces utilizing a computer-controlled laser that polymerizes light-sensitive resins. The process is highly precise and constructs the object in a series of "additive layers," providing the advantage of producing highly complex forms that are difficult or impossible to fabricate by machining or traditional molding techniques. The evolution of advanced SL materials offers the potential of moving stereolithography from prototyping into production.

DSM Somos ProtoComposites™ are resins reinforced with various materials, such as ceramics and glasses, to produce functional properties not possible using individual components. Somos ProtoComposite materials are a result of a research and development program investigating the potential for ACT-SL™ (Advanced Composite Technology for StereoLithography).

DSM Somos ProtoFunctional® resins for stereolithography provide advanced technology to respond to the changing needs of new product development and industrial design. In 2003, DSM Somos announced ProtoTool™ ceramic-filled resins, the first member belonging to the new ACT-SL™ technology and the result of a significant research and development program. Traditional non-composite ProtoFunctional materials by DSM Somos satisfy a varying range of characteristics: transparency, superior humidity and heat resistance, and outstanding mechanical properties, replicating those of many production grade plastics such as polypropylene, polyethylene, ABS and PBT. Technical data on all Somos® materials may be found at www.dsmsomos.com

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