

The logo for ADMET, featuring the word "ADMET" in a bold, dark blue, sans-serif font. The letters are enclosed within a thin red rectangular border. Small red triangles are positioned at the top-left, top-right, and bottom-left corners of the border, pointing inward.

ADMET Allows Nerites Corporation to Test the Mechanical Properties of Synthetic Molecules

Challenge

Nerites Corporation was founded in 2004 to develop novel adhesives and coatings for a wide range of medical, industrial, and consumer applications. Its innovative approach creates synthetic adhesives and coatings that mimic the adhesive proteins of the common blue mussel (*Mytilus edulis*). The majority of Nerites' work focuses on structural adhesives and coatings for biomedical applications.

Nerites' researchers believe they can overcome the biomedical concerns associated with animal-derived and human-derived tissue adhesives and sealants by utilizing synthetic molecules. While these molecules answer concerns related to toxicology and viral transmission, they must still be tested for their strength and durability and all relevant mechanical properties. One of Nerites' senior scientists, Jeffrey Dalsin, Ph.D., contacted ADMET seeking a solution.

Solution

Dr. Dalsin knew that Nerites needed a small, horizontally-configured tabletop machine that could test materials in a temperature controlled saline bath. ADMET's Account Director and engineers recommended their eXpert 5602 table top testing machine equipped with an eP2 Digital Controller. After examining other options, Dr. Dalsin decided that ADMET was the best choice. The delivery took about six weeks and the setup was virtually automatic.

Results

From the beginning, ADMET worked with Dr. Dalsin to arrive at a solution tailored to his needs. He says, "I contacted ADMET and explained our needs and the force ranges in which we would be working and the fact that we wanted to have a certain amount of computerized control. I also explained that we wanted to test underwater. ADMET came through with a really good design and a very competitive price."

The in-house ADMET machine makes it easier to test different formulations quickly. Dr. Dalsin explains, "The pressure generated in the brain and spinal cord is much different than the pressure generated in, say, a blood vessel, especially the arterial system. So, we're developing different formulations for applications where different forces are involved."

Dr. Dalsin also has plans for further testing with the ADMET machine in the future. Having studied peak stresses, he is now interested in researching stress/strain relationships.



51 Morgan Drive Norwood, MA 02062
Tel: (781) 769-0850 Fax: (781) 769-0884
Sales@ADMET.com www.ADMET.com

1-800-667-3220