Bio:

Dr. David Irvin is an experienced synthetic polymer chemist working in monomer and polymer synthesis and characterization since 1988. Under the direction of Pat Cassidy at Texas State University (then Southwest Texas State University), he earned his Bachelors and Masters of Chemistry. While working towards his Doctorate on conductive polymers, Dr. Irvin was mentored by John Reynolds at the University of Florida. His work culminated in a dissertation entitled "Modification of the Electronic Properties of Conjugated Polymers". Dr. Irvin spend two years working for Sandi National Laboratory at Livermore. His polymer systems where expanded to include polyurethanes, paralenes, and epoxies. While working at the Naval Air Warfare Center at China Lake, he could work, publish and patent on several polymer systems including polyesters, polyarenes, polythiophenes, ladder polymers, acrylics, tetrazole based energetic binders and phenol-formaldehyde encapsulation. After 8 years, Dr. Irvin moved back to Texas and began working for Systems and Materials Research Corporation writing and leading various SBIR's. Polymer systems included epoxy and disulphide cure aerospace adhesives, photo-cure acrylics, and melt polyesters and polyurethanes. Recently, Dr. Irvin joined the team at Blueshift Materials to lead innovative research in polymer based aerogels. He joined the team at Blueshift to continue to explore the ever-changing world of polymer chemistry. The opportunity to bring the exciting field of polymer aerogels from lab to market is a new challenge in polymer synthesis and processing.

Title:

"From Lab to Market: Polyimide Aerogels"

David J. Irvin Ph. D.: Principal Polymer Scientist

Abstract:

Blueshift Materials is working to commercialize polyimide aerogels by building on exploratory research by the National Aeronautics and Space Administration (NASA). An aerogel is a synthetic porous solid with very low density. Aerogels are produced by first creating a solvent swollen gel and then replacing the solvent with air without allowing the pores to collapse. Aerogels were first made using silica, but now there are many polymer systems that have been demonstrated. In this talk, we will discuss Blueshift's history, the structure, properties, and applications of aerogels, the process on making polyimide aerogels into current product lines, as well as our current ramping of our production capacity.