

Retirees donate school supplies



Retired personnel of Holmes County adopted William Dean Junior Elementary School in Lexington to donate school supplies for grades K-5 which were delivered on January 25. Pictured above (from left) is: Sherri Reeves, Van Alice Williams, Shirley Menzes, Marie Williams, Joann Garner, Doris Buchanan, Patricia Gregory, Carolyn Powell, Bobbie Smith and Annie Waddell, president. (Photo submitted)



Drue Johnson is pictured (holding plaque) with her Yorkshire hog that won Mississippi Bred Champion Yorkshire at the Dixie National Livestock Show in Jackson last week. Pictured standing are (from left): John Thomas Murtagh, Johnny Murtagh, Hallie Murtagh, Cathy Murtagh and Carey Johnson. (Photo submitted)

Mississippi has a wealth of resources focused on advances materials

By Robert Thompson
For Mississippi Development Authority

Mississippi has a broad and diverse range of resources and capabilities in advanced manufacturing and advanced materials, from the research efforts underway at the state's universities to advanced manufacturing businesses utilizing advanced materials.

Advanced materials provide improved physical properties and capabilities as compared to those offered by standard materials. Materials in this group include special metal alloys, ceramics, nanomaterials, polymeric materials, and composite materials.

Mississippi has excellent services in place to support a growing number of businesses producing and utilizing advanced materials. For example, Mississippi has two GE Aviation facilities – one in Batesville and the other in Ellisville – both of which produce advanced composite components for jet engines. Additionally, Mississippi is home to numerous aerospace companies using advanced materials to meet client demands, including Aurora Flight Sciences, Airbus Helicopter, Northrop Grumman, Stark Aerospace, and more.

NASA's Stennis Space Center in Hancock County is home to companies such as Aerojet Rocketdyne and SpaceX. These companies routinely use advanced materials to provide solutions for applications that can only be considered "out of this

world."

Further north in Iuka in Tishomingo County, Orbital ATK builds aerospace and rocket body components using advanced materials, as well.

Composite materials also are used in areas such as marine applications (United States Marine, Seemann Composites, etc.), general utility applications, such as updating aging infrastructure without excavation (Insituform), and components in recreational vehicles (WaterWay, Inc.). A wide range of businesses take advantage of the benefits advanced materials offer.

Mississippi also is home to two automobile assembly plants, Nissan and Toyota, along with numerous automotive suppliers for each. The majority of these suppliers relies heavily on advanced materials and advanced manufacturing to meet design requirements. The use of advanced materials has skyrocketed in the past 20 years due to the push toward increased fuel efficiency. According to Energy.gov, reducing a vehicle's weight by 10 percent can increase fuel efficiency by 6 – 8 percent. Advanced materials will continue to play a central role in fuel efficiency advancements.

Mississippi also has advanced material producers making products that yield large and unique chemical effects. For example, Hybrid Plastics in Hattiesburg produces nanomaterials that

provide enhanced performance across a wide range of product categories, such as coatings, personal care products, engineering thermoplastics, and more.

In addition to Hybrid Plastics, Port Bienville Industrial Park in Hancock County is home to several polymer producers, such as Sabic Plastics, DAK America, and Polychemie.

Recognizing the economic importance of these innovative businesses, the University of Southern Mississippi has long supported Mississippi's advanced materials and advanced manufacturing industries through education, research, and outreach activities. The Department of Polymer Science was started in the late 1960's at USM and focused on researching polymeric resins for coatings. Throughout the years, the program has grown, addressing topics ranging from environmentally friendly coatings, the development of additives to provide enhanced fuel efficiency, improvements to engineering thermoplastic materials, and a myriad of other advanced material topics. These efforts continue today with the School of Polymers & High Performance Materials' research into areas such as self inspecting and healing coatings, efficiency improving materials for solar panels, impact absorbing materials reducing sports related injuries, and efforts to improve the performance and capabilities of high performance



John Thomas Murtagh is pictured with his Reserve Champion Chester Market Hog at the Delta District Livestock Show in Greenwood. John Thomas is the son of Kathy and Johnny Murtagh of Ebenezer. (Photo by Betsy Padgett)

composite resins.

The Mississippi Polymer Institute, the outreach component of USM's polymer effort, has the mission of using the advanced resources available through the school to help Mississippi's industries grow. The Institute is housed at the Accelerator, USM's 66,000-square-foot facility specifically focused on providing a location and atmosphere to accelerate the growth of innovative, high-tech companies.

The Institute maintains an ISO 17025-accredited test laboratory to address businesses' physical and analytical testing needs using state-of-the-art equipment and resources. These capabilities provide support to requests such as raw material contaminate identification, failure analysis and identification, and process improvement support.

MPI also provides rapid prototyping and 3D printing services to manufacturers around the state. This represents a new production paradigm called "additive manufacturing," and it is enabling

new production approaches for specifically designed products.

Providing technical training for existing and future workforces has been a key area for MPI since its inception. Topics such as high performance composite materials, injection molding, extrusion, blow molding, and lean manufacturing/process improvement are the focus of typical training sessions. MPI has provided support to businesses since 1993 and is committed to assisting the next generation

of advanced material and advanced manufacturing companies to help ensure their success and longevity.

Advanced materials play a significant role in the performance needs of tomorrow, and Mississippi is a fertile location for the growth of advanced material and advanced manufacturing businesses.

Fish Day!
It's Time To Stock Your Pond!
Delivery Will Be: Tues., March 5
Winona 1:00-1:45 @ Hi-Grade Farm Supply
Lexington 2:45-3:30 @ Lexington Farm Supply
Benton 4:15-5:00 @ CPS Crop Prod Services
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May 25
Peoples Drug Store
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