

The UAB Materials Applications Research Center (MARC) Program



The Materials Applications Research Center (MARC) Project at the University of Alabama at Birmingham was initiated to facilitate rapid development of emerging design, materials, and manufacturing technologies

to provide solutions for important military needs. The project is supporting the US Army Aviation and Missile Research, Development and Engineering Center (AMRDEC) at Redstone Arsenal in Huntsville Alabama.

MARC Accomplishments to Date



The UAB Department of Materials Science and Engineering is working with ARMDEC to produce a lightweight composite aerodynamic shell that will be part of the Trajectory Correction Kit (TCK) for the M26 rocket. The TCK will convert the M26 from an unguided weapon into a



“smart” rocket that is better able to precisely hit its intended target. UAB is responsible for materials selection, processing, and production of initial prototypes for the aerodynamic shell. Tooling is currently in production and prototype parts will be produced by early June 2007. This project takes advantage of the well-known expertise at UAB in the thermoplastic composite materials development and design area. Separate projects are also underway on new materials for kinetic energy penetrators and an improved component for the Patriot Missile launcher.

MARC Future Work



Future MARC/AMRDEC projects:

- Development of a light-weight thermoplastic composite replacement for the current Hellfire Air-to-Ground Missile launch rail system
- Development of new non-destructive evaluation process that is based on performance of a part as opposed to the workmanship standards currently employed
- Continued development of new materials for kinetic penetrators that can replace the depleted uranium currently in use

