

NASA National Center for Advanced Materials

PERFORMANCE BULLETIN

at the National Institute for
Aviation Research



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Welcome to the National Center for Advanced Materials Performance (NCAMP) e-bulletin! Housed at the National Institute for Aviation Research, NCAMP was established to provide the nation with a center for composite and advanced material validation and quality assurance.

Through these monthly e-bulletins, you will be informed of up-and-coming composites and advanced materials research.

NCAMP's Mission

Boeing and Airbus, two of the major large transport aircraft manufacturers, are providing the platform for the next revolution in aerospace vehicle technology with the development of the Boeing 787 and the Airbus A380. This trend is also being seen in applications throughout the general aviation and business jet industry as well as military and space applications.

These advances in vehicle development will likely accelerate during the next decade as new emerging technologies are applied to design and placed into production throughout the aerospace industry. In response to this need, NASA has established the National Center for Advanced Materials Performance (NCAMP) at NIAR.

NCAMP is the next natural step after NASA's Advanced General

Aviation Transport Experiments (AGATE) program. This program developed shared databases that allow manufacturers to select an approved composite material system to fabricate parts and perform a smaller subset of testing for a specific application. The establishment of NCAMP will take the next step in that development. Anticipated benefits include reductions in nonrecurring and recurring program qualification costs, introduction of multiple sources of new advanced material forms, and increased material property stability through improved statistical quality control.

Objectives of NCAMP:

- Increase the efficiency of advanced material implementation into new aircraft models while at the same time decrease the cost of these materials.
- Facilitates growth of the use of advanced materials in aerospace application while addressing safety, certification and lifecycle issues to ensure airworthiness assurance and safety.
- Examine old guidance materials related to advanced materials and determine the relevance with respect to new advances in technology.
- Promote the cost-effective use of composites and advanced materials to reduce the Direct Operating Costs (DOC).
- Integrate the results of research performed by NCAMP to create standard engineering practice and training within the advanced materials community and assist in creating relevant policy and guidance materials.

Highlights of this issue:

NCAMP and its consultants are working on a carbon fiber specification and a carbon fiber fabric specification to improve prepreg material property control. Carbon fiber and fabric specifications are not very common in the aerospace industry; only large aircraft companies have such specifications. Smaller companies have mostly relied on prepreg material specifications only. NCAMP intends to use these specifications to benefit all shared material database users, large and small. NCAMP will champion these standards through the SAE P-17 sub-committee.

NCAMP is conducting a survey to gain feedback from composite material users on their current and future composite material needs. The results of the survey will be sent to material suppliers so that they can better allocate their research and development efforts to meet the composite materials need in the aerospace industry. A summary of this survey will be included in the next issue of NCAMP e-bulletin so please stay tuned!