



# NASA National Center for Advanced Materials

PERFORMANCE BULLETIN

at the National Institute for  
Aviation Research



NATIONAL CENTER for  
ADVANCED MATERIALS  
PERFORMANCE



**NIAR**  
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Welcome to the second issue of the National Center for Advanced Materials Performance (NCAMP) e-bulletin! Through these monthly e-bulletins, you will be privy to a wealth of up-and-coming composites and advanced materials research.

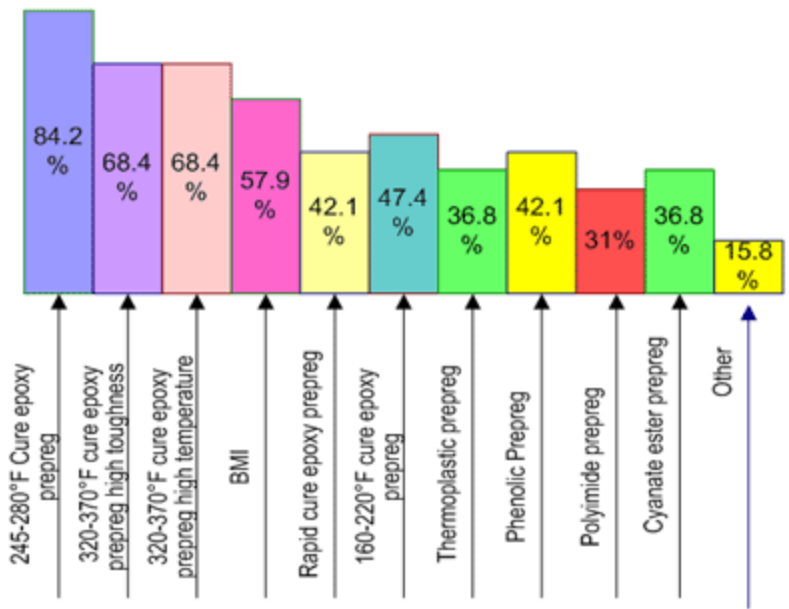
### **NCAMP Survey Results:**

NCAMP recently conducted an unofficial survey to gain feedback on the current and future composite material needs in the aerospace industry. The results are designed to provide NCAMP with information on what categories of composite materials to qualify into the shared material database. A total of 19 individuals from 16 companies responded to the survey.

When asked if their companies will use more advanced composite materials if certified material properties are more readily available, sixty-eight percent of the respondents said yes, 10.5 percent said no, and 21.1 percent said they were not sure.

When asked if their companies are currently using the AGATE Shared Database Methodology (outlined in DOT/FAA/AR-03/19), 53 percent of respondents said yes, 31.6 percent said no, and 15.8 percent said they are not sure.

The respondents were asked to check all the prepreg systems being used or of interest at your company. Below is the result:



When asked if it would be beneficial to include compatible adhesives for curing process, 18 out of 19 respondents said yes, and one said they were not sure.

A more detailed result of the survey can be found at [http://www.niar.wichita.edu/newniar/researchlabs/pdf/ncamp\\_survey\\_results\\_final\\_2\\_.pdf](http://www.niar.wichita.edu/newniar/researchlabs/pdf/ncamp_survey_results_final_2_.pdf)

NCAMP is currently working with material suppliers to compile a list of their materials that meet these popular categories. The list of materials along with their properties will be sent to NCAMP Industry Advisory Board for selection. This selection process is designed to ensure that the materials qualified into the shared database are indeed those desired by the aerospace industry.

### Collaboration with the University of British Columbia

NCAMP recently met with Dr. Anoush Poursartip and Dr. Göran Fernlund of University of British Columbia to discuss the use process maps to design cure cycle envelops for AGATE/NCAMP shared database materials. The process maps which are typically created using multiple differential scanning calorimetry (DSC) runs will enable one to predict the degree of cure of any arbitrary cure cycle consisting of multiple ramps and holds. The plan is to validate the extremes of the cure cycles through other thermal and mechanical tests. The resulting cure cycle is expected to be broader than those currently recommended by the AGATE shared database material suppliers. The process maps will also provide useful information for the disposition of questionable cure cycles.