

AMTAS Spring Meeting April 12, 2007
Breakout Session III
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Moderator

List of future ideas in rough order of ranking by importance.

1. Health Monitoring/NDI

- a. Sensors; Identify what is happening—monitor structures
- b. Health monitoring- to be used to optimize design- try and develop a linkage between design and health monitoring
- c. NDI development; more/better test methods, improve accuracy of the probability of detection

2. Bonding

- a. More surface chemistry and energy research/understanding
- b. Icing (coating) solutions and alternatives
- c. More/better surface energy understanding
- d. New age “Nano Tools”
- e. Increase process control inspection for production with hybrid bonded structures
- f. Improved/quantifiable certification of bonded structures
- g. Crack arrestment features instead of fasteners

3. Smart (Tailored) Structures

- a. Morphing structures
 1. Aerodynamics
 2. Efficiency
 3. Material actuation
 4. Self repair
- b. Self heating and cooling structures
 1. Change of properties/phases/etc.
- c. Self healing composites
- d. Multifunctional interaction between systems-probabilistic approach with a holistic view

4. Advances in Analysis and Simulation

- a. Consensus building to get the best “Return of Investment” and best solutions
- b. Durability—develop simulation of service time, chemical, AC systems etc.
- c. Accelerated aging techniques or degradation to better simulate service conditions
- d. Crack propagation as a function of structure and materials – failure modes
 - new materials, new modes
 - new systems evaluations
- e. Closed form failure modes relative to composites

5. Education

- a. Composites degreed Engineers, are we teaching the right/current skill sets?
- b. Reassessment needed?
- c. CMH 17 training- Use the advantages of an online format.

6. Materials

- a. Expand standards to give more equivalent specifications & allowables by breaking through proprietary definitions.
- b. Repair methodologies and standards need more definition
- c. Supply chain involvement in the process
- d. Textile/fiber/ perform optimization.
- e. Recycling of composite aircraft considerations.