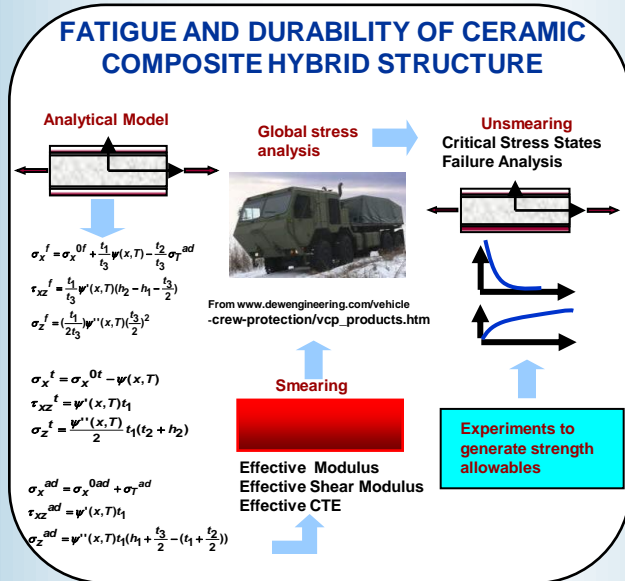
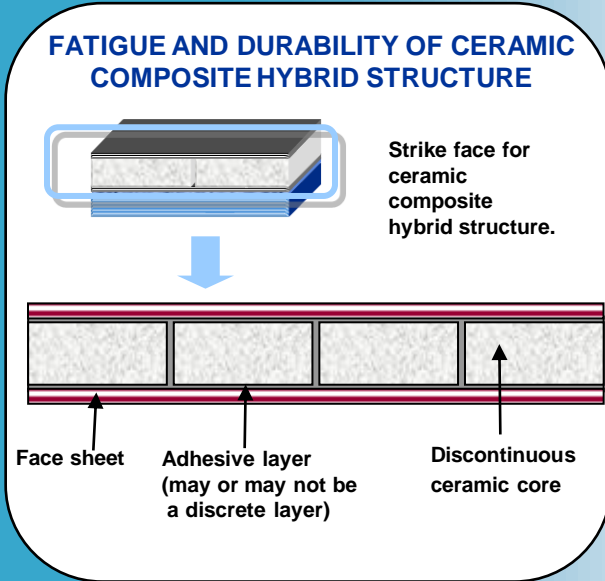


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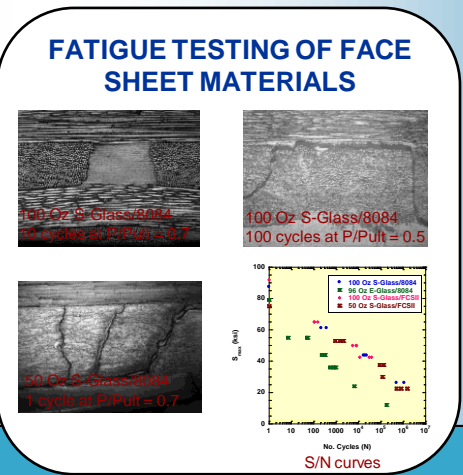
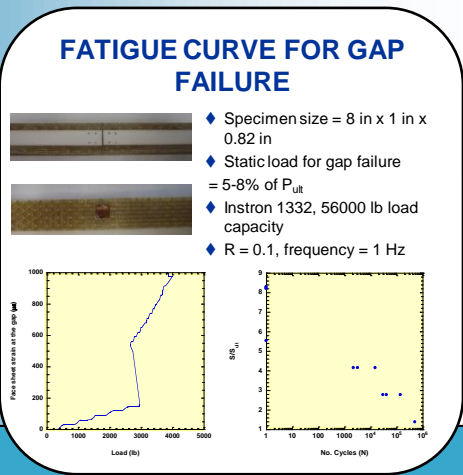
MOTIVATION

- ◆ Develop test methods to generate failure property data for analysis of discontinuous ceramic composite hybrid structure.
 - ◇ Experimental Characterization
 - ◇ Static
 - ◇ Fatigue
 - ◇ Environment: room temperature, ET etc.
 - ◇ Analytical Treatment
 - ◇ Analytical/FEA
 - ◇ Smearing/un-smearing approach
 - ◇ Evaluation of Materials
 - ◇ Matrices
 - ◇ Preforms
 - ◇ Interlayers
 - ◇ Pretreatments etc

TENSION-TENSION FATIGUE AT 11% OF P_{ULT}

Test set up Tile crack near gap Face sheet cracking

- ◆ 1st Crack developed in tile just above or below the gap on first cycle
- ◆ 2nd Crack at tile interface @ 1000 cycles; arrests in less than 0.2 inches)
- ◆ Outer crack in face sheet @ 4000 cycles
 - ◇ At 90/0 interface
 - ◇ Grows all the way to the grips



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