

## **Non-Destructive Testing of Composite/Plastic Materials Using Laser Shearography.**

**Author Information:** \*Cameron Green, Dr. Alem Teklu, College of Charleston.

**Presentation Key Words:** Non-Destructive Testing, Composites, Laser Shearography.

### **Abstract:**

Laser Shearography is used for noncontact testing on materials like composites, plastics and in some cases metallic materials. A 620-690 nm laser shearograph from DANTEC Dynamics was used to look for discontinuities and deformities in different samples. Materials used in this experiment were composite, plastic, cardboard and metallic samples. With the materials we used, we compared a neutral state to an excited state using a heat excitation method. This method heats the particles creating an excited state, from there we can see subsurface deformities such as cracks, wrinkles, holes, etc. Using this technique, we were able to image elevation changes and discontinuities in some of these materials and test its structural integrity. The image displayed on the software shows the size, depth, and type of discontinuity within the material.