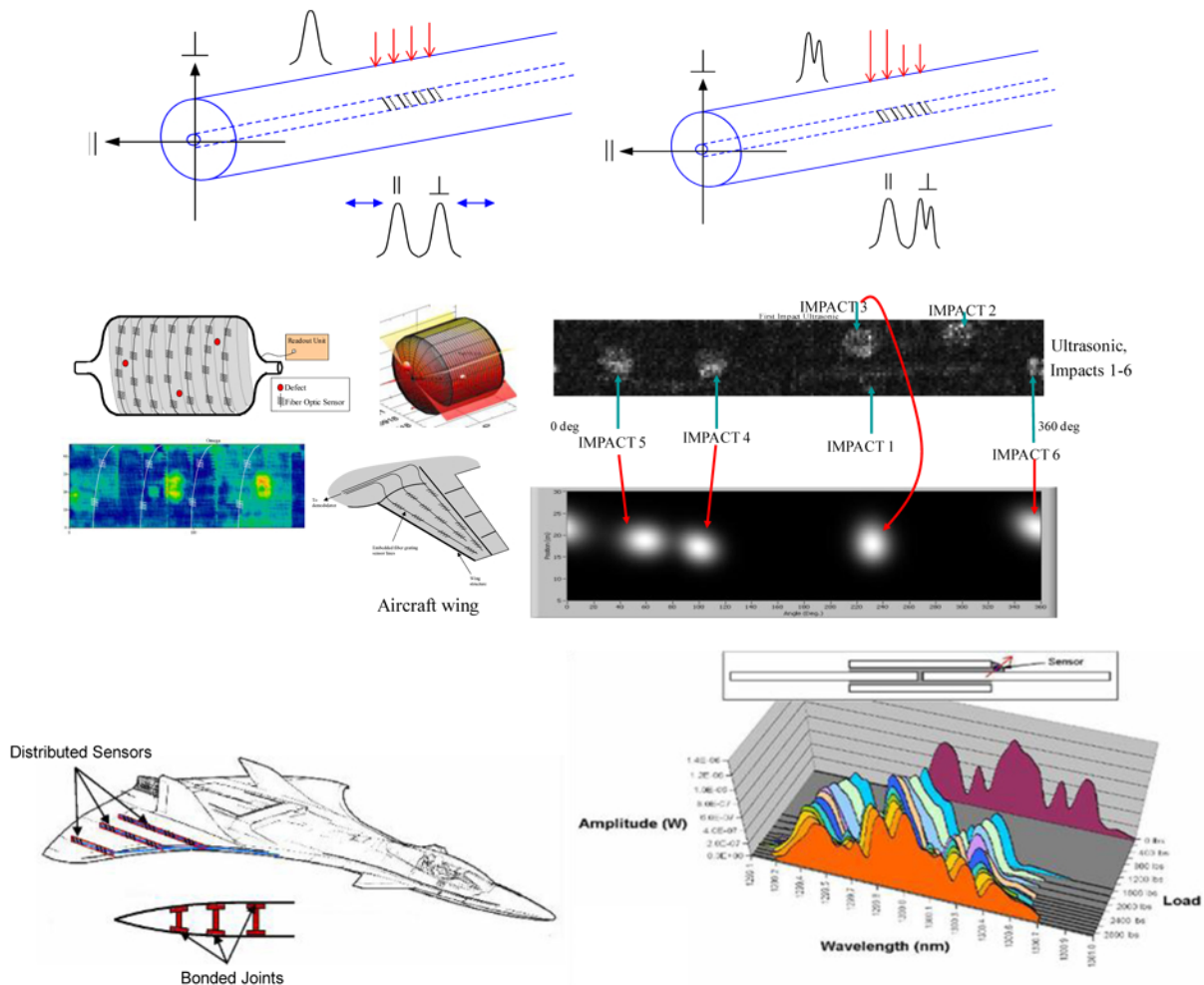




Multi-axis Fiber Bragg Grating Sensors and “Strain Imaging”

For thick composite materials, embedded Fiber Bragg Gratings sensors are subject to transverse strain as well as axial strain. In general, both the longitudinal and transverse strains will not be uniform and this will result in strain gradients. These in turn can be used to monitor the internal details of a structure and can be used to perform such functions as: (1) measuring strain fields internal to composite parts, (2) monitoring the failure of adhesive bonds with orientation monitoring shear strain, (3) providing the ability to localize and characterize internal damage to composite parts through “strain imaging.” Timbercon and Columbia Gorge Research can provide individual FBG sensors or complete analysis systems customized to meet application specific requirements.



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