

High-Speed Camera and GrindoSonic

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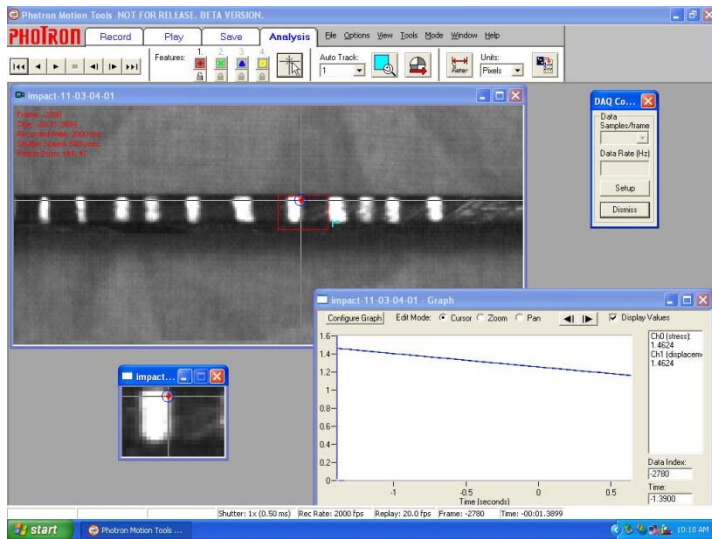
High-Speed Camera (Optikon)

- Frame rate: 10,000 fps
- Resolution:
 - 512 x 480 at 250 fps
 - 256 x 120 at 2,000 fps
 - 128 x 34 at 10,000 fps
- PCI board with full 512 MB memory of 512MB to store up to 2176 full frames at full resolution. This is equal to 8.7 seconds of record time at 250 fps.
- camera displays live image while recording.



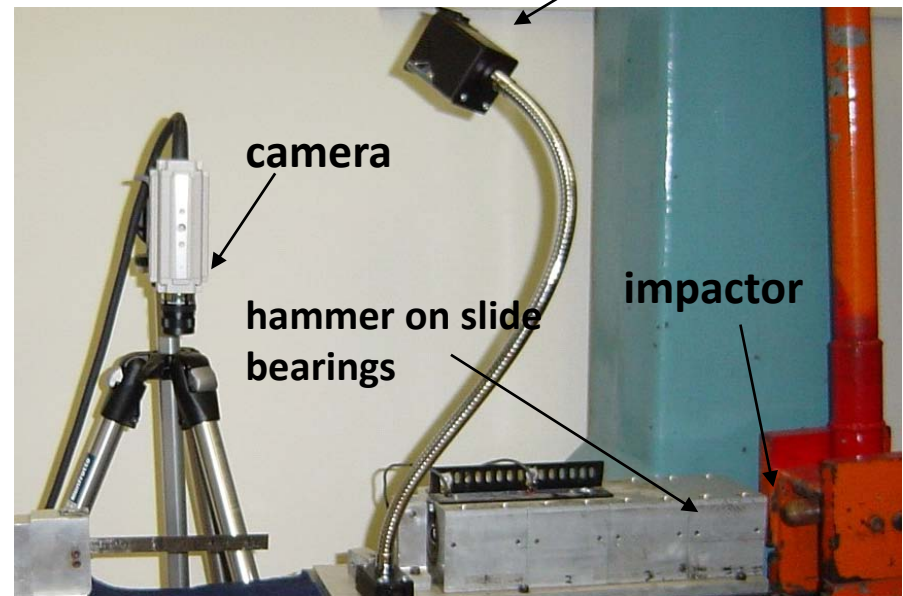
Application

Recording Pulse Buckling of Graphite-Epoxy Laminates Subjected to Axial Impact Loading



captured image

light



camera

hammer on slide bearings

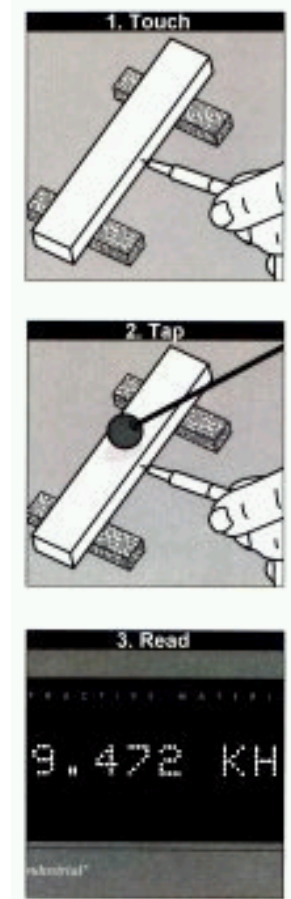
impactor

GrindoSonic (by JD Lemmens)

The GrindoSonic is a system for measuring the elastic properties of a wide range of materials.

- based on the “impulse excitation technique”
- material object is excited by means of a light mechanical impulse
- object then produces a transient mechanical vibration
- the GrindoSonic instrument:
 - records this vibration
 - analyses it in the time domain
 - measures the natural frequency of the dominant vibration mode against a precision reference oscillator.

The frequency of this vibration depends on the mass of the object and its stiffness: knowing the mass, the elastic properties of the material can be determined.



Application

Determination of Mechanical and Damping Properties of Graphite-Epoxy and FRP-Reinforced Glulam Beams

