

ABSTRACT

METHOD AND APPARATUS FOR GENERATING MID-IR LASER FOR ULTRASOUND INSPECTION

A method of ultrasonic testing comprising conditioning a radiation wave from a laser source by efficiently converting the radiation wave's wavelength to a mid-IR wavelength for enhanced ultrasonic testing of a composite. The method includes passing the radiation wave through a first optical frequency converter where the radiation wave is converted into a signal wave and an idler wave, where the idler wave is at a mid-IR wavelength. The method further includes directing the signal and idler waves to a second optical frequency converter where the signal wave wavelength is converted to a mid-IR wavelength which combines with the idler wave to form a generation wave. The generation wave is directed at a composite surface to be tested.

Figure: 1