

# Commercializing of Terahertz Imaging for Micro/Nano Scientific and Industrial Applications

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Terahertz lies between the microwave and infrared regions of the electromagnetic spectrum. Until recently, this portion of the spectrum has been inaccessible due to lack of nanoscale sources and sensitive detectors. Terahertz light 1) passes through many common materials, 2) is non-destructive & non-invasive, and 3) is non ionizing, and hence safe. It is therefore an excellent tool for non-destructive characterization of many novel material systems.

TeraView has been at the forefront of the development and commercialization of this technology. An important aspect of the commercialization of the technology has been transitioning R&D developments into systems compatible with the production line. A key challenge for TeraView in the commercialization process has been the need to simultaneously develop both products (including the associated hardware and software) as well as lucrative market applications for Terahertz. Coatings and delamination in pharmaceutical tablets, multi-paint layers on cars and faults in semiconductors are all examples of where the technology is currently being employed by industrial end-users. Non-destructive testing of materials such as glass fibre re-enforced composites, thin film nano-materials, ferroelectrics and other functional materials represent future applications. Identifying the most lucrative opportunities from the above list via work with lead customers has been a key activity within the Company. Optimising the actual product (via hardware and software modules) with customer support has also been key to success.

Case studies involving work with the pharmaceutical, semiconductor, solar, security and automotive industries will be presented to illustrate these challenges.

Case studies will also be presented to illustrate how the requirements of customers dramatically change when moving from R&D onto production lines.

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