

Translating optical coherence tomography from medical to non destructive testing of materials

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Optical Coherence Tomography (OCT) has been initially developed as a non invasive high resolution optical imaging modality for ophthalmology, followed by rolling the technology to other medical fields. OCT has however considerable potential in non destructive (NDT) testing, that can be employed in art conservation and material characterisation. An important advantage of OCT is that high axial resolution is achievable at comfortable working distances (typically a cm), which is an important requirement for safe scanning of valuable materials or objects of art. The review will present the OCT technology and recent developments in the field of broadband sources, phase sensitive OCT and OCT angiography that can be extended to high resolution NDT, spectroscopic characterisation, assessment of flows and identification of specific material entities in tissue.