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**A Review of 3D imaging techniques for visualisation of the structure of energetic composites** A.E. CARMICHAEL, D.M. WILLIAMSON, Fracture and Shock Physics, SMF Group, Cavendish Laboratory, JJ Thomson Ave., Cambridge, CB3 0HE, United Kingdom, R. GOVIER, AWE, Aldermaston, Reading, RG7 4PR — A review of imaging techniques which can be used to acquire three dimensional data on the structure of polymer composite materials is presented. The techniques chosen utilise a variety of mechanisms for forming contrast, and include x-ray tomography (XCT), nuclear magnetic resonance (NMR), and optical & electron microscopy. Discussion is illustrated with reference to a particular HMX based UK PBX. The achievable contrast and spatial resolutions are considered, along with arguments relating to the destructive and non-destructive methods of acquiring data. Particular emphasis is given to the safety concerns and the added experimental complications which arise when studying energetic materials.

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