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(54) Title: COMPOSITE COATINGS (57) Abstract The invention describes composite coatings, in particular comprising carbon and another metallic element such as silicon or aluminium. These coatings have improved properties compared with pure tetrahedral amorphous carbon coatings, in that they have reduced stress levels and can be deposited at higher thicknesses, whilst retaining acceptable hardness and other useful mechanical properties. Also described are methods of making composite coatings, materials for making the coatings and substrates coated therewith. Specifically, a method of applying a coating to a substrate using a cathode arc source, comprises generating an arc between a cathode target and an anode of the source and depositing positive target ions on the substrate to form the coating, wherein the coating is a composite of at least first and second elements and the target comprises said at least first and second elements. A composite coating comprises tetrahedral amorphous carbon and a metallic element other than carbon, the composite coating having an sp³ content of at least 60 %. A target for use in a cathode arc source comprises a mixture of carbon and a metallic element other than carbon. *162162*		