

COMBINATION OF ta-C PROPERTIES OF PARTICULAR PRACTICAL INDUSTRIAL APPLICATION INTEREST

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Not only the higher hardness of ta-C coatings is of interest for many industrial hard coating applications, but frequently their unique simultaneous combination with other outstanding properties, which usual DLC and other diamond and related materials, will not be always able to associate easily. Among them, homogeneity, higher density, surface smoothness, elasticity, higher thermal stability, and optoelectronic properties, and their ability to be modified for some desired surface functions. We present in this poster, some concerned application aspects, corresponding to wood cutting tools, injection moulds and OLED power lighting and flat screens for which those unique possible combinations are of highest practical interest. Those reported types of property combinations are of interest for many more other more traditional or advanced high tech industrial application, when the coating processes can be up scaled, the adhesion optimized, and the intrinsic stress can be reduced.

It appears then, to be of high importance, to be able to produce these ta-C coatings, with optimized well understood coating processes and device design, especially in order to insure some sufficient adherence quality and reproducibility on each specific type of substrate size, shape, and appropriate throughput.

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