Transmission electron microscopy and x-ray diffraction studies of high explosives detonation soot

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Electron microscopy and diffraction studies were performed on the saved condensed detonation products of a number of high explosives (HEs): TNT, composition TNT/RDX (50/50), BTF (benzotrifuroxan) and TATB.
The samples were 20 mm in diameter and 30 mm in length, and weight is about 20 g. The detonation was initiated by PETN or HMX, as those HEs produce inessential amount of detonation soot. The experimental samples was placed in 1 kg ice shell.
The uniform experimental conditions allows to to conduct a qualitative and quantitative comparison of obtained under similar conditions detonation soot of various HEs. The results demonstrates differences in graphite-like and diamond inclusions morphology and quantitative content of nanodiamonds for selected HEs.