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Semiconductor Model of Detonation KONSTANTIN GREBENKIN, VNIITF — According to the semiconductor model of detonation [1-2], the rate of the burning wave propagation from the hot spots and, hence the energy release macrokinetics in a detonating HE, is controlled by the electron heat conductivity process in unreacted HE compressed and heated by the shock. In the given report a review on current status of the semiconductor model of detonation is presented, including the results of the recent measurements of electric conductivity of unreacted TATB-based HE loaded by shock waves [3], evaluation of the rate of the burning wave propagation from the hot spots and, finally, an improved temperature-based macrokinetic model of detonation initiation in TATB-based explosives.

References

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