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Universal mechanism of abiogenous synthesis of organic substances in the processes of SHVI

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Experimental results of laboratory modeling of super-high-velocity impact (SHVI) by laser influence proved assumption that organic compounds are synthesized from inorganic substances in plasma torch generated during the impact. Comparison of these results with the data of direct impact experiments conducted on dust particle accelerator showed that parameters of modeling are selected correctly, physical characteristics of plasma torch and of the processes occurring there are similar and confirmed the possibility for synthesis of multi-atom ions at the velocity of the impact higher than 15 km/s.

Dependence of synthesized organic compounds structure and molecular weight from focal spot's diameter and duration of laser influence was studied.

Structures of synthesized hydrocarbon compounds were investigated by non-mass-spectrometric methods, compounds were identified as carbines - linear - chained carbon. Places of localization of compounds outside of plasma torch were studied using carbines as marked atoms.

Method of accumulation of necessary amount of polyatomic compounds synthesized in plasma ejection for their identification by modern molecular analytic techniques is proposed.

Obtained results allow to draw a conclusion that proposed mechanism can be an universal natural mechanism that provides synthesis of organic substances in the impact processes (or in SHVI processes) both on the planets at the early stage of their forma-

tion and in interstellar gas-dust clouds.