

# Problems and prospects of ultra-jet technology in rocket space engineering

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*The article presents the waterjet technology development and prospects for their improvements based on a number of theoretical and pilot studies.*

*A special attention is paid to various aspects relating to physical phenomena accompanying the waterjet material processing and also to technological parameters interrelations.*

*The carried-out experimental and theoretical data analysis has revealed groups of corresponding factors in materials and liquids waterjet processing which enable to make the hypothetical assumption that a number of them has been studied insufficiently and they, with a rather high degree of probability, are perspective for future researches and have an opportunity to become a basis for some new applications of hydrotechnologies.*

*According to results of numerical modeling by a finite element method main stages related to consecutive development of wave processes in a specified material and on its surface were defined.*

*The article emphasizes the perspective innovative directions of research developments in the field of hydrotechnologies applications — diagnostics of materials and coatings, micro-suspending, disinfecting and activation of hydrotechnological environments, etc.*

**Keywords:** *high-speed stream of liquid, material, erosion, suspension, diagnostics, water-jet treatment*

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