LINE OF ACTION AND ADVANCED SCIENTIFIC TASKS OF THE LABORATORY OF HYPERSONIC AND PLASMA TECHNOLOGY MIPT

Prokhorov A.N.,¹ Son E.E.,² Arefyev K.J.,*² Son K.E.²

¹ CIAM, Moscow, Russia, ² MIPT, Dolgoprudny, Russia
*arefyev@ciam.ru

For basic and applied research as well as training in the development of advanced aerospace systems and their power plants under the program 5top100 in MIPT established scientific laboratory hypersonic and plasma technologies (HPT). Lab partners are leading industry and academic institutions, enterprises and aerospace higher education. The objectives of the HPT lab is to conduct fundamental research in gasdynamic flows due hypersonic flow past bodies of different configurations, the determination of thermal properties and characteristics of durability of materials under conditions of high heat loads, the study of hydro-and plasma-chemical processes in high-enthalpy flows, including the polyphase. An important part of the laboratory is to study the integration issues hypersonic aircraft propulsion. The results of some computational and experimental studies of gas-dynamic structure of external and internal flows in a power plant integrated with a hypersonic aircraft. The results of work aimed at forming scientific basis and development of experimental base HPT lab. The outline of the activities of the laboratory in the near and medium term.