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## Guest Editor's Preface: Zababakhin Scientific Talks

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Thanks to the amiable assistance of Professor Miley, the publication of selected papers presented at the Conference "Zababakhin Scientific Talks" in the *Laser and Particle Beams* journal is becoming a good tradition. Zababakhin Scientific Talks is an International Scientific Conference regularly held at the Russian Federal Nuclear Center–VNIITF in Snezhinsk, Russia.

The Conference, which is named after the prominent scientist, Academician Evgeny I. Zababakhin (January 16, 1917–December 27, 1984) who had made a major contribution into the establishment and development of high energy density physics, and into studies of cumulation phenomena widely used to attain the high energy density states. Starting from August 1960 until December 1984, he was the Scientific Director of the Russian Federal Nuclear Center–All-Russian Research Institute of Technical Physics. This span has marked the time period when the scientific school and experimental basis of high energy density physics and cumulation phenomena were established at the Institute yielding both theoretical and experimental results of highest importance.

Out of 300 papers presented to the Fifth Zababakhin Scientific Talks, September 21–25, 1998, the Editors of *Laser and Particle Beams* selected 18 papers conforming to the journal's subject. The largest group includes seven papers presenting experimental, theoretical, and computational results of turbulence phenomena investigation. These papers depict modern trends in the study of turbulence: tendency to investigate specifics in complex cases of turbulence. Three papers of the team headed by Dr. Kucherenko (Nos. 788, 789, 791) describe new results obtained on the unique experimental facilities at RFNC-VNIITF. The paper of the team headed by Dr. Anuchina (No. 800) is devoted to the direct

numerical simulation of three-dimensional Rayleigh–Taylor turbulence; papers by Prof. Lominadze (No. 779) and the team headed by Es'kov (No. 782) describe shear-driven turbulence. Some new approaches to calculating unstable interfaces between substances are presented in the paper by Gordeychuk et al. (No. 800). Young theoreticians Neuvazhayev and Kozlovskih (No. 780) study how heterogeneity of the turbulent layer influences the rates of reactions in it.

Of great interest are review papers by Dunne (No. 811) and Kochemasov (No. 784), which describe laser thermonuclear fusion programs in Great Britain and Russia, as well as the papers by Voinov and Mkhitarian (Nos. 790, 786) presenting some new results on laser thermonuclear fusion-related problem. A splendid work by Gamalii and Rode (No. 781) serves the basis for possible nontraditional applications of lasers in technology. Three papers (Nos. 802, 803, 783) are devoted to the development of numerical methods for modeling various phenomena in plasma in the presence of magnetic fields.

Papers by Loboda (No. 793) and Politov (No. 787) describe calculation results for the line spectrum of hot plasma radiation and the use of this radiation for diagnostics. The organizing committee of Zababakhin Scientific Talks expresses its gratitude to the Editors of *Laser and Particle Beams* and, in particular, to Professor Miley for the publication of these papers.

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