

## Main Results of the 24th International Conference on Vacuum Technique and Technology (VTT2017)

**A A Lisenkov<sup>1</sup> and D K Kostrin<sup>2</sup>**

<sup>1</sup> Institute of Problems of Mechanical Engineering, Russian Academy of Sciences, 199178, Saint Petersburg, Russia

<sup>2</sup> Saint Petersburg Electrotechnical University “LETI”, 197376, Saint Petersburg, Russia

E-mail: lisran@yandex.ru, dkkostrin@mail.ru

**Abstract.** In this preface the main results of the 24th International Conference on Vacuum Technique and Technology (VTT2017) that was held on 6–8 June 2017 in Saint Petersburg, Russia are discussed.

In the period from 6 to 8 June 2017 at the Saint-Petersburg Electrotechnical University “LETI” and All-Russian Research Institute of Metrology took place the 24th International Conference on Vacuum Technique and Technology (figure 1). The Organizers of the Conference were: Russian Academy of Sciences, Institute of Problems of Mechanical Engineering RAS, Saint Petersburg Electrotechnical University “LETI”, Saint Petersburg Polytechnic University, All-Russian Research Institute of Metrology and Russian Scientific and Technical Vacuum Society.



**Figure 1.** Emblems of the Saint-Petersburg Electrotechnical University “LETI” (left) and All-Russian Research Institute of Metrology (right).

The aim of the Conference was to study the results of the research in physics of vacuum, vacuum measuring, mass spectrometry and leak detection. Were discussed the issues of producing vacuum, vacuum equipment and development of the new technological processes. Special attention was paid to the use of vacuum technology in the processes of films and coatings formation using plasma and related methods, study of the properties of coatings and methods of their research, new composite coatings, including nanomaterials, as well as new areas of their use, and the development of modern

equipment and processes. Were analyzed the problems of industry cooperation and collaboration in the framework of the Federal Target Programs and the formation of the General Strategy of the development of vacuum equipment and technologies as an independent high-tech industries.

In this regard, the main sections of the Conference were:

1. Vacuum technique. Vacuum measurement. Mass spectrometry.
2. Vacuum ion-plasma methods of surface treatment.
3. Nanomaterials and nanotechnologies.
4. Physical processes of coating formation, properties and methods of their evaluation.

In the course of work of the Conference were presented 87 oral reports, including 13 plenary, and 21 posters. Among the speakers were professors, PhD students, students and representatives of industry. The Conference was attended by representatives of different regions of Russia and Republic of Belarus, Kazakhstan, Ukraine and Vietnam (figure 2). The total number of participants was 115.



**Figure 2.** Some photos from the Conference.

All of the presented scientific results and developments correspond to the level of World analogues, and in some cases surpass them in the performance and technological capabilities. Most of the developments are protected by patents for inventions; some of them were also presented at the XII International Exhibition of Vacuum Equipment “VacuumTechExpo 2017” (Moscow, 11–13 April 2017).

All messages of the Conference participants draw the scientific and practical interest. In general discussions questions, comments and opinions were presented. It should be noted the high professionalism of the speakers and the high ethics of communication parties during the exchange of the opinions and answers to the questions.

During the Conference were held “round tables” devoted to the analysis of the reports and the work of the Conference, also they touched upon the issues of training of the students and postgraduates. It was noted that currently young people pay more attention to the technical education and after graduation find jobs at the enterprises of electronic industry.

In order to summarize the Conference results participants noted that the diversity and number of the submitted reports are the signs of the constant technical development of this field of science and technology. However, against this background, participants, technical specialists with deep theoretical knowledge and extensive practical experience, expressed concern about the absence of a strategic plan for the development of vacuum technology in the Country in the near future.

The Conference participants decided to:

1. Consider the work of the Conference as successful.
2. State that the Conference is an effective link between the industrial enterprises, educational and academic institutions located in different regions of Russia and abroad.
3. Keep the format of this Conference and held the next one in June 2018.
4. Draw the attention of the Russian Scientific and Technical Vacuum Society and its President on the need for consolidation of specialists of this direction, their organizations and, subject to the comments made, further promoting the achievements and relevance of tasks associated with the development of vacuum technology.