Aims and Results of the 23rd International Conference on Vacuum Technique and Technology (VTT2016)

A A Lisenkov¹, D K Kostrin² and V A Pavlova³

¹Institute of Problems of Mechanical Engineering, Russian Academy of Sciences, 199178, Saint Petersburg, Russia
²Saint Petersburg Electrotechnical University “LETI”, 197376, Saint Petersburg, Russia
³Saint Petersburg Polytechnic University, 195251, Saint Petersburg, Russia

E-mail: lisran@yandex.ru

Abstract. In this preface the main features, aims and results of the 23rd International Conference on Vacuum Technique and Technology (VTT2016) that was held on 7–9 June 2016 in Saint Petersburg, Russia are discussed.

The International Conference on Vacuum Technique and Technology is held annually, the main organizers of the event are (figure 1):

- Russian Academy of Sciences (RAS);
- Institute of Problems of Mechanical Engineering RAS (http://www.ipme.ru);
- Saint Petersburg Polytechnic University (http://english.spbstu.ru);
- Saint Petersburg Electrotechnical University "LETI" (http://eltech.ru/en/university).

For the last several years the conference is held at Saint Petersburg Electrotechnical University "LETI" (figure 2) – alma mater of the 2000 Nobel Prize winner in Physics, Zhores Alferov.

Figure 1. Logos of the organizers of the 23rd International Conference on Vacuum Technique and Technology (VTT2016).

The members of organizing and scientific committees were the leading Russian scientists:

- Afanasjev V P – Full Prof., D. Sc., Saint Petersburg Electrotechnical University "LETI";
- Koval N N – Full Prof., D. Sc., Institute of High Current Electronics RAS;
The event was held in several sections:

- Vacuum technique, vacuum measurement and mass spectrometry;
- Vacuum ion-plasma methods of surface treatment;
- Nanomaterials and nanotechnology;
- Physical processes at all stages of coating formation;
- Technology and properties of coatings and films and methods of their analysis.

The aims of the conference were:

- to present new achievements and results of theoretical and experimental research in the physics of vacuums and vacuum measurement, mass spectrometry and leak testing;
- to consider topical issues of producing vacuums, use of elements of vacuum systems and creation of new vacuum equipment;
- to discuss the application of vacuum technology in surface modification and formation of thin films and coatings using ion-plasma and beam technologies;
- to assess the prospects of applying ion-plasma technologies for synthesis of new materials, including nanomaterials;
- to facilitate the integration of efforts of research teams through discussion of new ideas and results, and testing of innovative practical developments.

To achieve these objectives the following activities were carried out:

- exchange of experience and fruitful discussions on the development and operation of vacuum equipment, new technological devices, technologies, materials and methods of research;
- presentation of new developments of equipment, components and parts, technologies, control systems, vacuum and automation elements;
development of relations and establishing of new contacts between industry and science, manufacturers and developers of technical management systems, suppliers and customers of the vacuum equipment;

stimulation of the creative potential of young scientists in the field of vacuum and vacuum technology.

The following participated in the 23rd International Conference on Vacuum Technique and Technology (VTT2016):

- institutes of the Academies of Sciences of Russia, Belarus and Ukraine;
- leading higher education institutions;
- scientific research institutes;
- production companies.

The total number of participants was 127 (figure 3), representing various regions of Russia and also Belarus, Ukraine, Germany and Vietnam. During the Conference 84 oral and poster reports involving all areas of vacuum technique and technology were presented. The best 30 papers were chosen by the Scientific Committee to be presented in this volume of Journal of Physics: Conference Series.

![Figure 3. Participants of the second day of the 23rd International Conference on Vacuum Technique and Technology (VTT2016).](image)

All presentations by the participants of the Conference inspired the scientific interest of the audience. In the general discussion, questions, comments and opinions were presented. It should be noted and appreciated that a high professionalism of the speakers and also high ethics of communication were present among the participants during the exchange of views.

In order to summarize the results of the Conference its participants noted that the diversity and number of submitted reports was a sign of the continuous technical development of the industry, and responsibility of the participant groups for its future development.