



## National Student Team Contest Basic Guidance Rules

### XII Russian Internet Olympiad on Nanotechnology "Breakthrough to the Future"

#### National Student Team Contest 2017/2018 *Basic Guidance Rules*

#### **Introduction**

The International Nano Olympiad (INO) is a collaborative international annual event which holds an international competition among university level students. INO is organized to improve motivation of the students towards deeper knowledge in nanotechnology and better skills for innovative applications of real scientific and industrial problems. It is also a platform for international collaboration and networking in the relevant areas of nanotechnology. Participants propose their competitive ideas and plans as nanotechnology based solutions for focused problems related to global challenges. The National Student Team Contest (NSTC) operates as a national stage of the INO to select a student team for participation in INO with a support of the Organizing Committee of the XII Russian Internet Olympiad on Nanotechnology (RION) "Breakthrough to the Future". These rules are based on regulations of RION and take into consideration of the regulations of INO.

#### **The Contest**

The National Student Team Contest (NSTC) is a competition among bachelor and master students of higher school in Russia considering theoretical and creative tasks in English based on nanotechnology and nanomaterials subjects. The tasks are design to select the best **national team members** for participation in the International Nano Olympiad contest on nanotechnology as determined by annual regulations of INO. The NSTC consists of two main steps - a distant stage on solving theoretical problems in the field of nanotechnology and a consulting stage with experts of RION after selection of the NTSC winners. The sum achievements of both the stages will play the role for the formation of a Russian Nation Team of Students in nanotechnology assumed to take part in the International Nano Olimpiad (INO). The NSTS is a part of the Russian Internet Olympiad on Nanotechnology (RION), by definition.

#### **The Scope**

NSTC includes but not limited for both theoretical problems, experimental studies and searching for innovative solutions in the fields of nanotechnology as closely related to modern materials science, physics, optics, inorganic, organic, analytical, physical chemistry, biochemistry, biophysics, nanomedicine, engineering of high-tech devices and IT technology, material treatment, technical entertainment, marketing of nanotechnology products.

#### **The Goal and Tasks**

The mail Goal of NSTC consists in selection of the best students to demonstrate national team achievements on the international level.

The contest tasks include:

- dissimilation of advanced knowledge and state-of-art on modern nanotechnology, nanomaterials, material processing and practical analytical tools among future specialists in nanotechnology and other high technologies of the modern society,
- improving skills, knowledge and mind of nanotechnology specialists,

- cultivating the spirit of research and development among talented youth,
- selection and promotion of best students in the field of nanotechnology,
- creation of national and international cross links between research teams,
- development of new ideas and approaches in the field of nanotechnology and nanomaterials.

### **Organizers**

Lomonosov Moscow State University and the Fund for Infrastructure and Educational Programs are the organizers of RION and NSTC as a part of RION. At the same time, the NSTC program and regulations are being coordinated in accordance with the annual INO rules to provide better results of National Student Team participation in the INO. Persons responsible for contacting with INO representatives are named from the RION Organizing Committee official members. The NSTC Jury has to be formed by the Organizers among leading scientists and researchers in the field of nanotechnology, chemistry, physics, biology, innovations. The Jury rates the solutions of the participants on the basis of full independence, transparency and scientific ethics. The final results are confirmed by the responsible representatives of the Organizers prior to a public announcement of the winners of the contest. The winners are supported within the budget limits of RION in terms of travel and living expenses in Moscow and travel expenses to INO with limited finding of their stay in the host country of INO.

### **Participation**

All the participants must register using the official Internet platform of RION <http://enanos.nanometer.ru>. Registration is followed by solving theoretical tasks and preselection of the participants for the second, consulting, stage of the contest in Moscow. Only BS and MS students, the citizens of Russian Federation, are legible to participate. All the participants must be polite, tolerant and well skilled through the entire competition process. The first, theoretical, stage involves individual participants, the second, consulting, stage forms a national student team as a main unit for the further competition aimed to be continued during INO.

### **Time Schedule**

The starting date of NSTC is the same as for RION and should begin within the first decade of December. The ending point of the first, theoretical, part should be limited by the end of January. The second, consulting, stage and the final selection procedure of the National Student Team should be settled on the end of March being the closing point of RION. The post - olympiad support of the Team is scheduled in accordance with the announcement of INO. The planning of the visit of the Team in the host country of INO is scheduled according to the regulations of INO.

### **Final Remarks**

Web site of RION – <http://enanos.nanometer.ru>, the web site of the Fund for Infrastructure and Educational Programs – <http://www.rusnano.com/infrastructure>.  
Contacting address – [enanos@nanometer.ru](mailto:enanos@nanometer.ru).

### INO Long Term Vision

Initially, INO is inclined towards promotion and education. As time proceeds, the importance of solving problems (in particular environmental and industrial issues), commercialization, and business aspect will be highlighted. It is also envisaged that the expected technology readiness level (TRL) and manufacturing readiness level (MRL) of each teams' plans will be increased. TRL 5 and MRL 4 may be targeted for later INO periods. Creation of an international acceleration network among member economies is a part of the long term vision.

### International Nanotechnology Olympiad



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