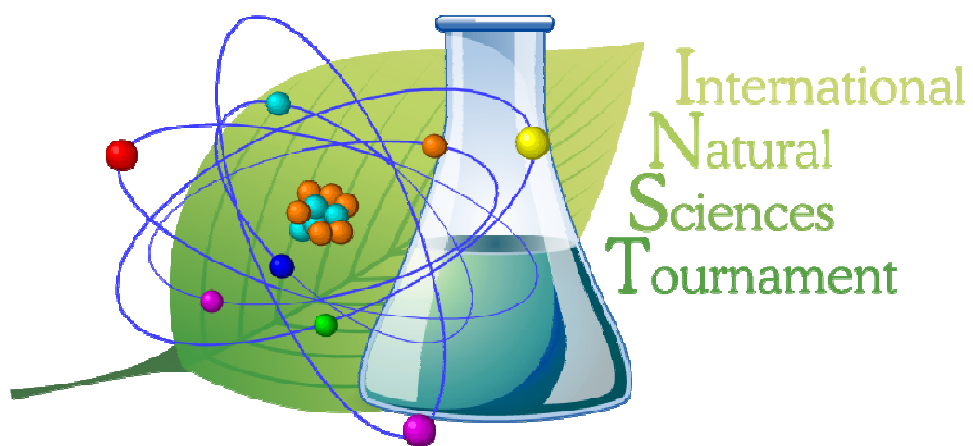# Competition Rules and Regulations

International Natural Sciences Tournament

November 14-18, 2012

Saint Petersburg

Russian Federation

Part 1. General information for the Tournament and its rules

1.1 The purpose of the event is to introduce students to real industrial problems, and to make the network "student-company" for further cooperation. Participation in the III International Natural Sciences Tournament (hereinafter – the Tournament) is the unique opportunity to apply your fundamental knowledge in solving the practical problems.

1.2. The organizer of the Tournament is an active group of students, graduate students, alumni and faculty of the Faculty of Chemistry of Saint Petersburg State University (www.chem.spbu.ru), with the support of the Inter-University business incubator QD (http://qd.ifmo.ru) and partner enterprises.

1.3. The organizing committee reserves the right to change the rules of this Regulation in the case of changes in the number of teams or the conditions of the tournament.

Оргкомитет оставляет за собой право изменить правила настоящего регламента в случае изменения числа участвующих команд или условий проведения Турнира.

1.4. The team, taking part in the tournament, may consist of 4-5 members. Team can be accompanied by her coach.

1.5. The Tournament has two rounds: intramural and extramural.

1.6. Extramural round consists in solving at least two of the three offered qualifying problems. This round bears not only the function of selecting the best teams, but also a training function. After examining the qualifying problems by the expert committee, the comments and recommendations on the form and content of the proposed solutions would be sent to the team captains. Captains can use these recommendations to better prepare for the intramural round.

1.7. The intramural round of the Tournament will be held in three stages: two qualifying and one final round. For the first qualifying round teams are distributed to different rooms according to the results of the captains competition. In a section (room) in every round there will be three or four presentations of teams depending on the total number of the participating teams. In every round the team presents once as a speaker, once as an opponent and once as a reviewer.

1.8. The teams solve to at least 8 of the 10 proposed problems (5 problems in each qualifying round). The team may (but is not obligated) reject two problems (one for each qualifying round) without loss of points. In order to do this, a team should choose the numbers of selected problems (she wants to refuse) in the *team's passport* during registration right before the tournament start. The team cannot be challenged as a speaker for the problems, which she refused. For the final round the team must solve at least 4 out of 5 proposed problems. Thus, there will be offered 15 problems in total, of which teams have to solve at least 12 (4 in each of the three blocks).

1.9. Each team member may speak not more than once in the role of the speaker, not more than once as an opponent and not more than twice as a reviewer for two qualifying rounds.

1.10. Each team member may speak not more than once in the role of the speaker, not more than once as an opponent and not more than two times as a reviewer for the final round.

1.11. At the end of the Tournament, based on the sum of points scored in the final two rounds, there will be chose 3 team-winners who will receive certificates of I, II and III levels,

respectively. The jury determines the best speaker and the best opponent in the individual championship. The jury may also mention the best reviewer.

1.12. During their talks, all participants must be civil and polite. The full point cannot be given to the performance of the participant behaving inappropriately. In the case of malicious violations of the regulations the participant can be removed from presentations and/or from further participation in the tournament, and the team can be fined 1-5 points by the chairman of the jury.

1.13. During the challenge, participants are strictly forbidden to use the literature, as well as any other sources of information (laptops, tablets, e-readers, mobile phones, etc.).

Part 2. Basic terms

Speaker – a member of the presenting team giving a talk with the multimedia presentation on the solved problem for 7-10 minutes. The speaker is assigned by the captain of the team.

Opponent – a member of the opposing team who should evaluate the speaker's solution of the problem within 5 minutes. Opponent is assigned by the captain of the opposing team.

Reviewer– a member of the third team, who sums up the work of the speaker and the opponent, pointing out the strong and weak sides of both and performs after the end of the polemics.

Audience of tournament – all the people present in the section, except the members of presenting, opposing and reviewing teams, jury members and team's coaches.

Polemics – the sequence of actions of a speaker and an opponent, which consists in regulated response of speaker to the comments of opponent, arguing those responses by the opponent and etc. Time allowed to each of the participants is regulated to 5 minutes and is fixed by a section's leader.

Challenge – a sequence of actions in the discussion of one problem.

Cycle – a closed sequence of challenges. If there are 4 teams in a section, then one cycle will consist of 4 challenges. If there are three teams in one section, there will be three challenges in one cycle.

Captains competition – individual contest between the captains of the teams. The results of the contest determine the priority of captains choosing the role in the first round of the Tournament.

Winners of the Tournament - three teams (I, II and III places), scored the maximum number of points in the final round of the Tournament.

Team's passport – individual form of the team, which includes the information about members, rejected, presented and opposed problems, and received points. During one cycle, teams' passports are hold by the section leader.

Extended solution – solution of the problem in the format *. doc, which consists of certain parts and is considered by the jury during the speaker's presentation on a specific problem.

Part 3. Captain's contest

3.1. Captain's contest is held before the start of the Tournament in order to determine the relative number of the team. The team's number determines the distribution of the teams in rooms in the first round.

3.2. Instead of the captain, vice-captain of the team can participate in this competition (by agreement with the host and the jury).

3.3 Results of the captain's contest do not affect the points of the team in the Tournament, but can be used in controversial situations (equal points) to determine the results of the Tournament (the distribution of prize-winning places).

Part 4. Rules for the speaker

4.1. The team responding to the challenge sends one person (speaker) who presents in the free-form the solution of the problem during 7-10 minutes with a demonstration of multimedia presentation. Before the beginning of the presentation the speaker should repeat the problem. The teams are strongly recommended to submit presentations in the format **MS PowerPoint 97-03 (*. ppt)**. The format *.pptx is not recommended because it can cause problems with correct display (complaints are not accepted). Presentation consisted of illustrations in the form of drawings on the board or posters is allowed only in extreme case and cannot be evaluated in a full point.

4.2. If it necessary, the speaker is allowed to use the notes (but not literature). In this case the captain of the team has to show the notes to the jury and get a permission to use them. In the case when a problem is presented in English, the speaker is allowed to use only clean notepads to write the comments of the opponent.

4.3. Before the beginning of the presentation the speaker should provide two copies of extended solution to the jury for review. The presentation should not be longer than 10 minutes. At the end of the presentation the speaker should inform the jury and the opponent that it is over (e.g., by saying "The presentation is over"). In the case of obvious violation of the regulations the presentation can be interrupted by the chairman of the jury of the tournament (section), or the host.

4.4. The speaker must reply specific questions from the opponent, jury and audience very briefly. The answer to the question, prolonged beyond measure, can be interrupted at any time by the chairman of the jury or the host (with the consent of the jury).

4.5. When responding to the opponent's comments, the speaker must be brief. The answer may include details of the parts of the solution, mentioned by the opponent, but it should not be the retelling. Response to the opposition lasts no more than 3 minutes and can be interrupted by the chairman of the jury or the host (with the consent of the jury) if excessing this limit and if the speaker is changing the subject.

Part 5. Criteria for solving the problem and giving points to the speaker

5.1. The solution of the problem presented by the speaker is judged on a 20-point scale. This evaluation has the following components:

➢ *Mark for the scientific part*: **10 points.** The jury evaluates the following: scientific validity of the idea, creativity, and scientific level of responses to the questions;

➢ *Mark for the presentation of the solution*: **10 points**. The jury evaluates the following: oratory and the simplicity of the presentation and its appearance, the ability to present clearly and convincingly.

5.2. In order to get the highest mark for the scientific part, the solution of the problem should match the following criteria:

➢ Review of current literature on this problem (listed in the doc format in the extended solution of the problem). When information sources (e.g., scientific articles, books) are used in the solution it is recommended to give their references at the bottom of the slide. If the speaker does not put references in the presentation, it is recommended to make a separate slide at the end, i.e., the list of references. For literature search it is recommended to use libraries resources and electronic ones: elibrary.ru, eu.wiley.com, sciencedirect.com,. scopus.com, scifinder.com, t1.espacenet.com, apps.webofknowledge.com, www1.fips.ru, www.springer.com, and etc. In the list of references the speaker have to refer to original sources - books, papers, patents/certificates, abstracts of thesis;

Review of patented literature:

➢ Presence of engineering aspect of the solution (flow diagram of installation of the simulated process or etc.), a rough estimate of cost-effectiveness of the proposed idea;

➢ Creativity of the solution (presence of own original ideas, or ideas that supplement or improve the well-known solutions of these problems and etc);

➢ Experimental proof of the model proposed in the solution (if it is possible);

➢ Clear statement of the advantages and disadvantages of the solution, and also the comparative characteristics of the known approaches to the proposed by the team.

5.3. Failure to comply with one or more criteria of the problem solution affects the overall score for the scientific part (see part 14).

5.4. In the presentation of the solution the speaker should mention the following: basic scientific idea, references, proposed flowsheets, the reactions equations (if any), and other aspects of the solution requiring visual representation for a better understanding by audience and the jury.

5.5. Extended solution is submitted in electronic format (format *. doc) to the experts commission of the Tournament at registration. This file should contain the following sections:
1) Literature review on the given topic (references are required)
2) Basic scientific concept of the proposed solution and its detailed description (description of the proposed flowsheets, reactions equations, installations, and other technological aspects of the solution);
3) Conclusions: the advantages and disadvantages of the solution, place of the proposed concept among the modern methods (if any) of solutions of given problem;
Выводы: преимущества и недостатки предложенного решения, место предложенной концепции среди современных методов (при их присутствии) решения данной задачи;
4) List of references

5.6. The speaker submits two printed copies of the extended solution of the problem, to which he was challenged, to the jury just before the start of the presentation. Extended solution does not directly influence the evaluation of the jury, but may be further evaluated in controversial cases (equal number of points), and also serves as the explanatory material for the jury and can prevent many specializing questions.

Part 6. Rules for the opponent

6.1. **Opponent can challenge the speaker for any problem except those for which a preliminary rejection was issued, those have been already reported by the speaker and those that were have been played out in the current round. If such challenge is not possible, the last ban is excluded.**

6.2. After the challenge is accepted by the other team and the speaker is announced, captain of the opposing team assigns and announces the opponent ("Opponent is ... Last Name First Name").

6.3. The opponent should not go to the speaker, staying with his team during the presentation. He can make any notes and marks, without using the literature and other sources of information.

6.4. After the end of the speaker's presentation there are opponent's **specific** questions (no more than two). Questions should only explain opponent misunderstood elements of the presentation, not expanding its scope. Questions that do not meet this requirement may be withdrawn by the jury chairman or the host (with the consent of the jury). All questions that are not specific can be asked by the opponent during polemics. After the speaker answers specific questions the opponent has a minute for preparing.

6.5. Opponent has no more than 5 minutes to evaluate the presentation and comment on it. Opposition reveals scientific and technical flaws of the solution. **The main task of the opponent is to point out the flaws of solution: incorrect statements, unreasonable assumptions, the problem statements that are not included in the proposed solution, etc.**

6.6. Opponent should not make comments about the appearance of the presentation or evaluate public speaking skills of the speaker. Opposing should include only the essence of the given problem. During his speech, the opponent should not retell his solution of the problem, but he can show his knowledge of the subject, pointing out the effects, laws and other scientific aspects, which speaker have not mentioned in his speech, but that should be considered in accordance with the problem.

6.7. Opponent must inform the jury and the speaker about the end of his speech ("Opposition is finished"). In the case of violation of the regulations opposition can be interrupted by the chairman of the jury of the tournament (section), or the host (with the consent of the jury).

6.8. Both during and after the speaker's response to opposition, the opponent must stand beside the speaker to answer possible questions of the jury and audience.

6.9. Opponent's speech is evaluated by the jury on 10-point scale.

Part 7. Rules for the reviewer

7.1. Reviewer must point out the disadvantages of the solution that were not mentioned by the opponent, such as: incorrect statements, unreasonable assumptions, the problem statements that are not included in the proposed solution, etc. Also, the reviewer should pay attention to opponent's unreasonable criticism of the presentation (if such kind of criticism was present).

7.2. Reviewer gives a brief evaluation of the speaker's and the opponent's talks, determines how well they coped with their duties, and analyzes speaker's and opponent's understanding of the discussed problem. If, in the opinion of the reviewer the opponent does not cope with his task, then, after giving appropriate arguments, the reviewer may take on the role of opponent in his speech. If the opponent unreasonably criticized the speaker, the reviewer should give arguments in defense of the speaker. **Reviewer should act as an independent "judge", and at the end of his speech to announce his opinion: "I think that the problem is solved," or "I think that the problem is not solved."**

7.3. Reviewer is allowed to point out the technical defects of the presentation and the speech.

7.4. After the reviewer's speech, the current challenge is over.

7.5. After the reviewer's speech, there are questions from the audience of the Tournament. They can be addressed to the speaker, opponent or the reviewer. Questions should be kept within the bounds of discussed problem. Any question that does not meet this requirement can be removed by the chairman of the jury or the host (with the consent of the jury). Questions from the audience are not evaluated, but the most active audience can be awarded a special prize by jury's decision.

7.6. The jury evaluated reviewer's speech on 5-point scale (in the blank)

Part 8. Polemics

8.1. Polemics is the competition between the speaker and the opponent which aims to show how quickly the representatives of the teams can respond to comments of the adversary, navigate the scientific laws and competently defend their point of view.

8.2. Opponent starts the polemics.

8.3. During polemics **only solution proposed by the speaker** is discussed.

8.4. The start of polemics is announced by the host of the section.

8.5. Each participant of polemics has only five minutes to talk. Each participant chooses own tactics to use the time. Time used by each participant in the polemics is recorded by the host or counting commission of this section. If a participant exceeds 5 minutes he has no right to continue the polemics.

8.6. Participants of the polemics should express their criticism or arguments in the correct form. Abuses and other aggressive behavior may cause a fine or disqualification of the participant.

8.7. The host of the section has a right to terminate (with the consent with the jury) the speech of one of the participants of the polemics, if the latter had violated paragraph 8.5.

8.8. Polemics of each participant is evaluated by the jury on 5-point scale separately both for the opponent and the speaker. The mark for the polemics is put down in the jury blank.

Part 9. English language

9.1. In the second qualifying stage **all the challenges** are held in English.

9.2. Each team has to prepare **at least two problems** from the second set (problem number 6-10) to represent it in English.

9.3. In the second qualifying stage the speaker chooses the problem of the challenge **by himself.** The problem number is announced by the team's captain. In this stage the opponent does not challenge the speaker and has to oppose problem chosen by the speaker.

9.4. During the talk in English the speaker is allowed to use only clean notepads.

9.5. The language of the whole challenge (including opposing, reviewing, polemics and questions) should coincide with the language of the presentation.

9.6. In the final round the language of the challenge is determined by the speaker after the team-opponent had announced the number of challenged problem.

9.7. The language of the presentation should coincide with the language of the talk.

9.8. The language map of the Tournament for all days are in the following table:

First qualifying stage		Second qualifying stage		Final	
1st round	2nd round	1st round	2nd round	1st round	2nd round
Russian	Russian	English	English	to choose from	to choose from

To be continued…