Extramural round grading system
Grand final of the International Natural Sciences Tournament

1. **Limitations to the number of experts**
   The solutions for each of the problems are checked by two separate experts. All the solutions are provided to experts in non-personal form, which means each expert does not know which team's solution he or she evaluates. One expert grades only one of the problems.

2. **Experts' Grading Criteria**
   For each evaluated solution, the possible maximum (hereinafter Possible Max) is set to 20 points. Possible Max is consists of the following grading criteria (the scoring range in the number of points for each criterion is declared below):

Solution elaboration, scientific approach	From 0 to 4
Solution originality (novel ideas, improvement of existing schemes, their presentation and quality factor)	From 0 to 2
Literature review (analysis of sources [books, articles, patents, dissertations, etc.], its completeness and authenticity)	From 0 to 3
Accuracy of task model (compliance with task conditions, an indication of solution limitations)	From 0 to 4
Figures, schemes, formulas, reactions	From 0 to 2
Logic and statement consistency	From 0 to 3
List of Sources/References	From 0 to 2

Normally the whole numbers are used for the presented grading. Using fractions as grades is acceptable in special cases. Every expert gives the Organizing Committee the grading sheets where criteria evaluations and the total score are presented. Experts can also provide some additional notes for improvement of the solutions. The ranking within each wave without any scores is published on the official website. The team's scores are sent to the captains of teams.

3. **Normalizing the experts' grades**

The experts' grades for the checked solutions are then normalized to Possible Max, where NPM is a Normalized to Possible Max score:

$$NPM = \frac{Expert's\ grade}{Possible\ Max}$$

After that, the Expert Average for all the graded teams is counted, where n is the total number of evaluated solutions:

$$Expert\ Average = \frac{\Sigma NPM_i}{n}$$

To reduce each expert's grading deviation, Normalized to Expert Average (hereinafter NEA) for each of the scores is calculated:

$$NEA = \frac{NPM}{Expert\ Average}$$

To avoid the two-expert grading deviation, Task Average for each of the solutions is determined:

$$Task\ Average = \frac{NEA_1 + NEA_2}{2}$$

4. **Total Score**

The Total Score for each team is counted by summing up all the team's task averages. The Total Score is provided in a 2-fraction manner.

If you have any questions, please do not hesitate to contact us via:
e-mail: tournament@scitourn.com.