



Extramural Round Problems

IX International Natural Sciences Tournament

1. WALL-E 2.0

In 2009 the commercial communications satellite Iridium 33 came into collision with the decommissioned communications satellite “Kosmos-2251”. This collision created a large amount of debris, and yet again increased the mass of industrial waste on the orbit of the Earth.

Space debris is a severe problem for launching and operating spacecraft, yet still there are no reliable ways of cleaning up our planet’s orbit. Propose your own technology for removing space debris, assess and justify its recyclability.

2. Green worms

There is a belief among fishers that fish better bite at green worms that glow underwater. Is there any physiological prove of this assumption? Propose your own way of increasing the appeal of worms to the fish, taking into account the fish physiological and behavioral characteristics. Your alteration should be available to the ordinary fisher.

3. Ammonia collapse

Special urea-based admixtures are used to speed up the setting of precast concrete constructions, as well as to increase the frost resistance of concrete. After the building has been commissioned, the owners encounter a long-lasting odor of ammonia indoors. Further interior finishing and continuous airing doesn’t help get rid of it, and the content of ammonia in the air several times exceeds the permissible levels. Propose a cheap and available way for the residents to solve this problem.

What alternative concrete technologies can the property developer use to avoid the emission of ammonia during the further use of the buildings?

The Tournament consists of extramural and intramural rounds. To participate in the extramural round the team should send clear and outstanding solutions of two out of three extramural round problems before the 1st of November 2018.

Each solution consists of:

1. Presentation (*.ppt, *.pdf);
2. Extended solution (*.doc) – 5 pages or less.

The solutions should be sent before the deadline via account on the [website](#).

If you have any questions in regard to the presented information, please, do not hesitate contact Teams' coordinator Vera Somova via:

✉ e-mail: participants@scitourn.com;

📞 WhatsApp: + 7 981 740 68 54;

💬 Skype: vera_suns

Please, remember the following notes:

- participation in the extramural round is free of charge;
- participation fee for the intramural round is 1000 US Dollars.

This will provide a team of 5 members and its coach accommodation for the intramural round days of the Tournament.

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