



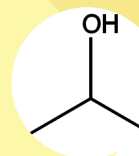
“Birthday is my best accomplishment here”

Lamanto Valerio celebrates 18 on page 2 >>



A typical citizen is a driver

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Something you'd better not know about chemical weapon page 4 >>

Salvadorans walk the talk



After claiming that playing football is a must for every male citizen of El Salvador, Salvadorans took the field and indeed showed a great game.

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Today is gonna be the day | *Catalyzer's tips*

7.00-8.00 Breakfast	We in Russia have an idiom: when you can't do a thing or do it with difficulty, people will say "You've eaten too little porridge". In Russian it sounds like "Каша мало ел" [car-she marla yell]. Guys, you'll face a big challenge in MSU today, eat more porridge! By the way, while English porridge is traditionally made of oats, here in Russia we cook it with everything: rice, semolina, peas, pearl barley and millet.
8.00-9.30 Transfer to MSU	Spend some quality time on your way, prepare for the experimental tour. Russian students have a superstition: if you put a 5 rouble coin inside your shoe (under the heel), you'll have luck at the exam. There's no statistics on how this thing works with Olympiads, so you can check for yourself.
10.00-15.00 Experimental tour, MSU	Both sides of the entrance to the faculty are marked with two statues of great Russian chemists: Mendeleev and Butlerov. Again there's a superstition: touch Mendeleev's foot to succeed in non-organic chemistry exam, for organic chemistry go touch Butlerov's feet.
15.00-17.00 Lunch in MSU	There are 37 food points over the whole area of MSU, the main building alone has 5 canteens. Enjoy not only the meal, but the atmosphere of the place, which was designed at the time when Soviet Union was launching the first spaceman Gagarin and developing nuclear energy.
17.00-18.30 Transfer to Circus	You'll most probably have a chance to see the famous Moscow traffic jams.
19.00-22.00 Circus Performance	You're lucky to be visiting one of the oldest – still the coolest – circuses in Russia. In front of it there's an unusual monument to a great clown Yuri Nikulin with a permanent queue to take a picture. The third superstition for today – rub his nose for luck.
22.00-23.00	Transfer to Planernoye, dinner... This is where we run out of space!

Salvadorans walk the talk

>> from page 1

Yesterday morning the future chemistry gurus proved science is not their only strong point. The pre-dinner break was enough for over a half of all IChO male Olympians to show up at the pitch. Multinational teams played in the come-and-go “sudden death” mode, meaning that every match was played until the first scored goal.



According to the names on T-shirts among players from Armenia, Lithuania, Turkmenistan, Kyrgyzstan, Poland, Venezuela and Sweden there were real stars: **Alberto**, Peru (Nº9) and Argentinian **Del Grosso** (Nº10). The fans were delighted to greet Real's halfback **Angel Di Maria** (Nº7) who came to play, although very soon turned out to be an Azerbaijani **Balagardash Bashirov**. The same happened to the player named Jesus Christ, on whose behalf, as it turned out, a Salvadoran **Rodrigo Dueñas** was playing.

Catalyzer was watching Salvadorans pretty closely. The thing is the evening before in an interview to us they've claimed that football is their country's national sport and real El Salvador male citizens are great at football.

Let's say El Salvador did not let us down.

No sooner said than done, in one of the games **Rodrigo José** was the one to score the decisive goal, in yet another game his compatriot **Edwin Ariel** did the same. By noon Catalyzer journalists – to their amazement – spotted a girl at the pitch. A beautiful representative of Switzerland named **Josephine Pratiwi** was chasing the ball in sandals, easily beating the guys. “Weren't you afraid to play against her?” – we asked a virtuoso Venezuelan **Johel Arteaga**. “Not me, because we're in one team, but other teams really should! – he said. – Yeah, playing football with girls is actually pretty awesome”.



“Getting 1 kg of cesium for birthday would be pretty cool”

Valerio Lamanto, Italy

18 years old

Born: Rive, a small village

80 km from Turin

Lives with his family: mother, father and a younger sister.

Speaks Italian and English

Studies chemistry for 3 years.

Believes it to be the second purest science after physics.



Valerio Lamanto appears to be a fine judge of strict and logical beauty. Maybe this is why he doesn't normally celebrate his birthdays. “What's the point, if I want to have a party I can anyway have it”, he says.

When Valerio turned 18 on July 17th he didn't even care for phone calls (left his cellphone back at home in Italy). But since Russia is one of the countries he's always wanted to visit, this birthday, Valerio admits, looks a little like celebration.

– Eighteen years old in Italy mean you're of age – with all that it implies. It also means that in a year I'll be finishing school and when I do, I'll try to enter Scuola Normale Superiore in Pisa.

– I can't say that much changed over this year since my last birthday. But one thing is definitely different: I'm here at IChO. I didn't get there last year, even though I applied and was the fourth in my country. This time I was luckier.

– I love organic chemistry. There's so much beauty in these reactions, they're logical, yet complicated, and this all challenges me incredibly.

– There is a person I admire, his name is, I mean was Alan Turing. The father of computation and the first guy to realise what we can do with electronics! Only his destiny is something I wouldn't like to repeat.

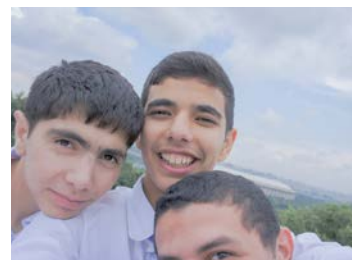
– If I could get a Nobel Prize, I'd love to get it for inventing a cure for cancer. Though I don't think it's possible, I'm not very much into pharmaceuticals, I'm more about theory and I don't really care how it's applied.

– My favorite chemical reaction is Fluorine + Cesium, because it's intense. It goes between the strongest metal and non-metal elements, it gives out no gas, it can go at low temperature and it gives the beautiful proper flame.

– If I could get a free ticket, I'd go to Iceland. Ice, fire, you see, I like contrasts :)

– The substance I'd like to be associated with is tungsten. Because it has the highest melting temperature ever. It never fuses.

– I haven't celebrated birthday for 5 or 6 years. I don't even remember what it is to get presents, except for birthday cards. I don't know what present I'd like to get... What? A kilogram of cesium? Haha, well, sounds nerdy, but that actually would be pretty cool!



A Country in Brief

New Zealand

Every day Catalyzer picks a random delegation and goes to meet the team.

The New Zealand team consists of three guys and one girl. We asked them to introduce each other.

Team about Cindy: Cindy is the only girl in the team. She can play viola.



Cindy on her country's great inventions in chemistry: Ernest Rutherford who was born in New Zealand postulated planetary model for atomic structure. He was the first chemist to try splitting up an atom and it's nucleus.

Cindy chooses the most typical New Zealander of her team: Probably Frank probably, because he is pretty relaxed and he really creative in the way he solves problems. Besides, Frank drives, although he's pretty young.

Team about Frank: Frank is very smart. And has an amazing talent to sleep in different places – in the bus, in the plane, at the station – mostly everywhere!



Frank finds differences between

Moscow and his own city: Moscow University is so huge comparing to Portland, where the university is all spread-out, so the buildings can be located all over the city. And your transport seems a bit more efficient than ours.



Team about Ka Yin Keniel Yao: Keniel plays saxophone, he's fond of music. He dreams of inventing a time-machine, because he'd like to use his time more efficiently. He wants it to be made of radioactive compounds because this would be real fun.



Keniel about his favorite substance: Luminescent substances because they shine in the dark and I like this blue light.

Team about Scott Huang: Scott is very quiet. He enjoys playing badminton! He is really very good at maths.

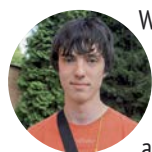


Scott on chemistry education in New Zealand: Children start studying chemistry at 13 or 14 years, and it is compulsory until they are 16. We have 5 science classes a week and 2 of them are chemistry lessons.

Kremlin insights

Olympians shared what they discovered during the Kremlin tour. Catalyzer shares something too.

Alexander Matthew Turner, Australia



We've learnt a lot about Russian medieval history today, I was surprised to learn that there wasn't just one Kremlin in Moscow, there are a lot of kremlins all over Russia.

Cat → The word "kremlin" itself means "a steep bank" and was used for Russian fortresses built on river banks. The most famous Russian kremlins are situated in Moscow, Pskov, Novgorod, Nizhny Novgorod, Kolomna, Tula, Kazan, Rostov, Astrakhan and Ryazan.

Roman Beránek, Czech Republic



We've learnt that Ivan the Great Bell Tower is the highest building in Moscow Kremlin, it's over 60 meters high. And the icon wall there is also very high and really impressive. We also noticed Russians really like gold, there are so many golden things there in Kremlin. And the size of those treasures is a bit...enormous!

Cat → The height of the Bell Tower is in fact over 80 meters. After it was built in 16-17th century, there was a longtime ban prohibiting the construction

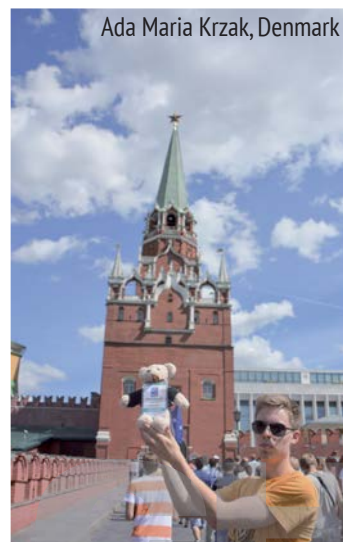
of buildings higher than it. So till the turn of 18th century it really was the tallest building in Moscow.



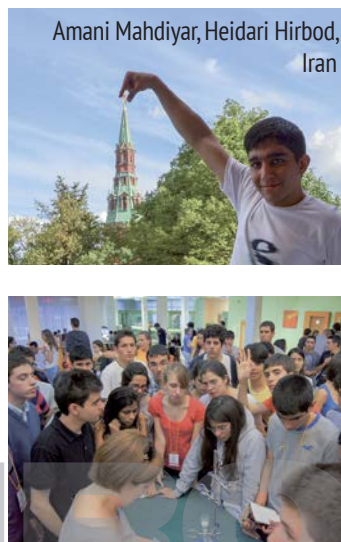
Kim Kristian Kuntze, Finland

It was very curious to know that Catherine the Great had about 15000 dresses and over 1500 carriages.

Cat → Catherine (Ekaterina) the Great (1729-1796) was a Russian Empress whose court is known for particular splendor.



Ada Maria Krzak, Denmark



Amani Mahdiyari, Heidari Hirbod, Iran



Amani Mahdiyari, Heidari Hirbod, Iran



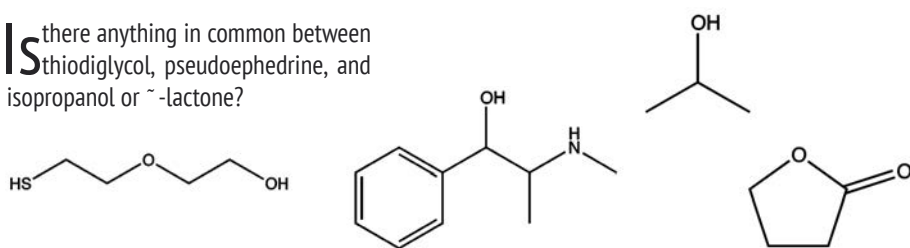
Priscila Vensaus, Paula Borovik, Nicolas, Nicolas Del Grosso, Lautaro Vogt, Argentina

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How is chemical weapon made

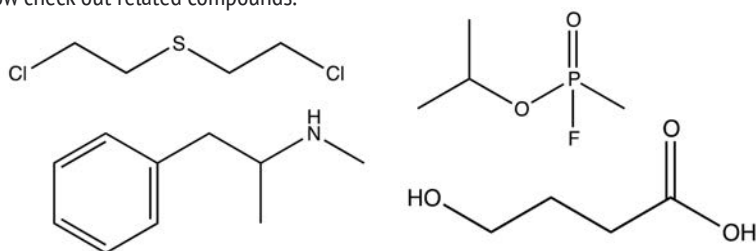
By Jan Apotheker, member OPCW Temporary Working Group on education and outreach, chair organization IChO 2002, Groningen

Is there anything in common between thiodiglycol, pseudoephedrine, and isopropanol or γ -lactone?



All substances are fairly common. **Pseudoephedrine** is the active substance in some cough syrups, originally extracted from Chinese plant Ephedra. **Thiodiglycol** is used for water-based dyes in cloth manufacturing industry, especially in developing countries, as well as for printing inks and felt-tipped pens. **Isopropanol** is the main component in glass cleaners and a solvent for many innocent purposes. γ -**lactone** is a widely used industrial detergent.

Now check out related compounds.



It shouldn't take you too long to figure out how to convert compounds in chart 1 into those of chart 2. The trouble is that compounds in chart 2 are respectively: **mustard gas**, **methamphetamine** (crystal meth), **sarin** and **gamma hydroxyl butyric acid** (party drug GHB). As you can guess, all four are dangerous and strictly forbidden in most countries of the world.

Not only chemicals pose these problems. Whole chemical plants can be misused in much the same way. This is what has happened several times over the last 30 years, when certain countries have supplied to others equipment then used to produce weapons and toxins like mustard gas, sarin and VX. The problem of the dual use of chemicals (for both innocent purposes and doing harm to others) is rather ethical than scientific. How does the international community deal with the problem?

>> To be continued in the next issue.

Happy Birthday!



Fang Haitian,
student, Singapore



Alex Eremin,
organizer, Russia

Meet Russian Chemists



Nikolay Zinin
(1812-1880)

First steps in chemistry

Was studying maths at the University of Kazan, when his rector, an outstanding mathematician Nikolay Lobachevsky, persuaded Zinin to do with chemistry. You could think it was a fail for a young guy to be advised not to keep on with maths by a great mathematician of his days. But in fact Lobachevsky said: "If you're brilliant at math, you'll be good in chemistry, and we are now in a great need for chemists".

Contribution to chemistry

In 1842 discovered the reduction of aromatic nitro compounds into aromatic amines (Zinin reaction). Basing on it, synthesized aniline. Zinin's syntheses became the basis for creating the industry of synthetic dyes, explosives, pharmaceuticals, fragrances. He discovered the hydrazobenzene regrouping when exposed to acids and called it "benzo-benzidine rearrangement" In 1852 synthesized isothiocyanate acid allylether, commonly called "volatile mustard oil". Discovered ureides (1855).

Interests

Contemporaries about Zinin: "Chemistry, mineralogy, botany, geology, astronomy, physiology, – he was familiar with all that, and fundamentally. He had amazing memory – he would quoted whole pages of Schiller in German and in translation".

Quote: "Your Alfred Nobel just snatched the dynamite from under our noses!"

Alfred Nobel, the future inventor of dynamite, was Zinin's countryside neighbor and saw Zinin's experiments with nitroglycerin.

What kind of souvenirs did you buy?



magnets – 12



postcards with Moscow view – 7



mugs – 4



T-shirt – 2



nothing – 4

khokhloma-style spoon, egg (Faberge imitation), matryoshka – 1



150 Years
Science For A Better Life



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