



Georgia the country of VINE

Georgia is one of the oldest wine regions in the world. The fertile valleys of the South Caucasus house the source of the world's first cultivated grapevines and Neolithic wine production, from over 8,000 years ago. Due to the many millennia of wine in Georgian history, and its key economical role, the traditions of its viticulture are entwined and inseparable with the country's national identity. Among the best-known regions of Georgia where wine is produced are Kakheti region.

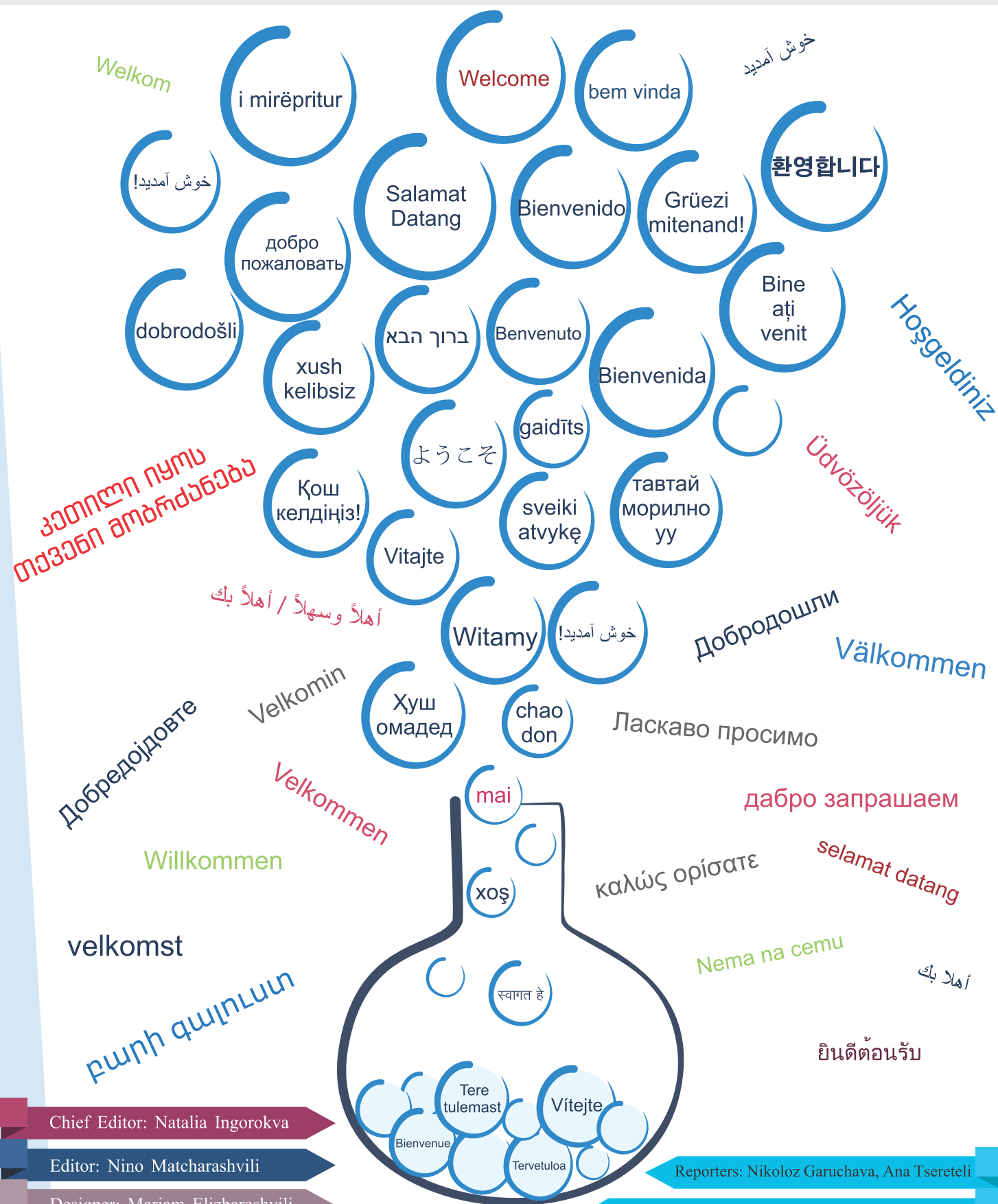
UNESCO added the ancient traditional Georgian winemaking method using the Kvevri clay jars to the UNESCO Intangible Cultural Heritage Lists.

Catalyzer

July 23 - August 1, 2016



N1



48-th International Chemistry Olympiad

Welcome Message

Mr. Aleksandre Jejelava - Minister of Education and Science of Georgia,
President of the IChO-48



On behalf of the IChO Organizing Committee, let me tell you that it is an incredible honor to host such important and prestigious international event as "The 48th International Chemistry Olympiad", which will take place in Tbilisi, Georgia, during 23 July-01 August, 2016. Let me assure you that our country and the Organizing Committee of the Olympiad will not spare any efforts to make sure that you take with you the most unforgettable memories of your days spent in Georgia in scientific, cultural and educational terms. Each and every one of us is well aware of the significance of the International Chemistry Olympiad and highly praise not only

its scientific-education worth but also its humane and cultural value. This event will undoubtedly contribute to popularization of natural sciences, and especially chemistry among young people. Furthermore, this event has a tremendous importance to lay the solid foundation for far-reaching and friendly relations among different nations, among the youth of different historical backgrounds and religious belongings, with diverse cultural values. Both these aspects are prerequisites for future large-scale scientific and technical achievements. It is well-known that astounding breakthroughs in science and technologies could be possible only through international collaboration and joint researches. Once again, let me reiterate my most sincere greetings to all of you and we are pleased to welcome in Georgia the most successful chemistry students from 80 countries all over the world.

Dr. Tamaz Marsagishvili - Deputy Minister of Education and Science of Georgia,
Chairman of Organizing Committee of the IChO-48



On behalf of the Organizing Committee, I have the honor to invite the delegation of your country to the 48th International Chemistry Olympiad, which will be held in Tbilisi, Georgia from July 23 to August 1, 2016. Georgia is very proud to host the Olympiad, a competition of talented young chemists from all over the globe. We hope that the competition will give further opportunities to the participants to take part in the joy of Chemistry, get to know each other,

and return home with the best impressions from our country. The event and the organizers will follow the rules specified in the Regulations of the International Chemistry Olympiad. All local expenses throughout the Olympiad will be covered by the host. Once more - this fact is very honourable and fruitful for our country as the development of chemistry is the guarantee for better peaceful future.

On the other hand this event will not be only connected with chemistry but all visiting students and tutors will be able to look through country's sightseeings, see different regions and have unforgettable leisure time. So we do widely open our door for you.

Sponsors



Media Communication Support



Organizers



Preparation
for IChO -
48th

Explanation of marks on the badges



Room:

Place

Practical exam



Room:

Place

Theoretical exam

Bus number



Place for
lunch and
dinner





Vakhtang VI. "Book of Chemistry"

Vakhtang VI "Book of Chemistry".
The magnificent book of Georgian
well known king Vakhtang VI is
now protected at the National

Center of Manuscripts. Georgian King Vakhtang VI's
book about chemistry points to the high level of
Georgian scientific thought in the first quarter of 18th
century. The text of "Book of Chemistry" was
compiled by Vakhtang VI shows some stages in the
development of chemistry, especially during the
alchemical period. The manuscript is copied by his
son - Vakhushy Bagrationi, in 1740-s. The drawings of
special tools used in physics and chemistry also
belonged to the latter. Copied in old Georgian script
Mkhedruli, in black ink, titles in cinnabar.



Hello
გამარჯობა
[Gamarjoba]

How are you?
როგორ ხარ?
[Rogor khar?]

Thank you. I'm well
გმადლობთ. კარგად
[Gmadlobt. Kargad]

Goodbye
ნახვამდის
[Nakhvamdis]

Nice to meet you
სასიამოვნოა
თქვენი გაცნობა
[Sasiamovnoa tkveni
gatsnoba]

WELCOME TO GEORGIA

T-Shirt colours:

- Head guides & guides
- Students
- Head mentors, mentors & observers
- Guests
- Organizers & SC members

Colours of the striped lines on the badge

- Organizers & SC members
- Head mentors, mentors
- Scientific Observers
- Head guides & guides
- Students
- Guests
- Media

Georgian Alphabet

ა - a	ბ - m	ღ - gh
ბ - b	ნ - n	ყ - q'
გ - g	ო - o	შ - sh
დ - d	პ - p	ჩ - ch
ე - e	ჟ - zh	ც - c
ვ - v	რ - r	ძ - dz
ზ - z	ს - s	ტ - ts
თ - th	ტ - t	ც - ch
ი - i	უ - u	ხ - kh
კ - k	ფ - ph	ჯ - j
ლ - l	ვ - q	ჰ - h

Georgian Scripts

The origins of the Georgian script are to this date poorly known, and no full agreement exists among Georgian and foreign scholars as to its date of creation, who designed the script and the main influences on that process. The first version of the script attested is Asomtavruli which dates back to at least the 5th century. the other scripts were formed in the following centuries. Georgian scripts are unique in their appearance and their exact origin has never been established. However, in strictly structural terms, their alphabetical order largely corresponds to the Greek alphabet, with the exception of letters denoting uniquely Georgian sounds, which are grouped at the end. The Georgian scripts are the three writing systems used to write the Georgian language: Asomtavruli, Nuskhuri and Mkhedruli. Although the systems differ in appearance, all three are unicas, their letters share the same names and alphabetical order, and are written horizontally following the standard left-to-right direction.



N2

Catalyzer

July 23 - August 1, 2016

"Chemistry is just another word for love"

48-th International Chemistry Olympiad in Georgia

Georgian National Dance

There are a number of Georgian dances and among of them Kartuli is one of the popular one. The dance Kartuli many times reminds the audience of a wedding. Kartuli is a truly romantic dance. It is performed by a dance couple and incorporates the softness and gracefulness of a woman and dignity and love of a man. It shows that even in love, men uphold their respect and manners by not touching the woman and maintaining a certain distance from her. The man focuses his eyes on his partner as if she were the only woman in the whole world. He keeps his upper body motionless at all times.

Georgian National Song—Chakrulo

Chakrulo, title untranslatable, is one of the masterpieces of Georgian polyphonic singing. It was famously included on the Voyager Golden Record which was sent into the outer space aboard the Voyager spacecraft in 1977. It originates in the mountains of the eastern part of the country, Kartli–Kakheti. The lyrics of the song reveal thematic richness of the Georgian folk music. They tell a tale of mountaineer serfs under the yoke of a feudal master from the Mukhrani clan. By describing preparations for an armed revolt against the feudal master, the song explores universal political themes of unequal power relationship, serfdom, and resistance to economic exploitation. It also sheds light on the very romanticized and Orientalized 'Caucasian valour'.



Shota Rustaveli

Shota Rustaveli mononymously known simply as Rustaveli, was a 12th-century Georgian poet. He is considered to be the prominent poet of the Georgian Golden Age and one of the greatest contributors to Georgian literature. Rustaveli is the author of The Knight in the Panther's Skin, a Georgian national epic poem.



Niko Pirosmiani

Niko Pirosmiani simply referred to as Nikala was a Georgian primitivist painter who posthumously rose to prominence. Pirosmiani's paintings were influenced by the social conditions of his time and place. There are many works about merchants, shopkeepers, workmen, and noblemen groups. Pirosmianashvili was fond of nature and rural life.

Khinkali

Khinkali is a very popular Georgian dumpling made of twisted knobs of dough, stuffed with meat and spices. It is considered to be one of the national dishes of Georgia. Different regions of Georgia make khinkali with different fillings. The most popular filling is a pork/beef mix. In the mountains, khinkali is often made with a lamb filling. Fillings can also include Imeretian cheese mixed with cottage cheese; mushrooms; and mashed potato. City versions include kalakuri khinkali with thinly chopped parsley and khevsuruli khinkali without parsley.

This is Georgia

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nikoloz Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Media Communication Support

Sponsors



Welcome to Georgia

This is Georgia

This is Georgia too



Organizers





Sitting at the foot of the imposing hill capped by the **Narikala** Fortress and climbing the slopes is Tbilisi Old Town, a labyrinth of narrow streets where wooden balconies look down from old brick-build homes. Doorways lead to hidden courtyards an ancient vines climb to the skies using anything vertical for support. Parts have been comprehensively renovated, arguably a little too enthusiastically, so that some streets look like a Disney film set, though far more of these twisting alleys are untouched. They are ramshackle, cracked and crumbling but delightful, enchanting, picturesque and real. Arguably a little too enthusiastically, so that some streets look like a Disney film set, though far more of these twisting alleys are untouched. They are ramshackle, cracked and crumbling but delightful.



The style is a mix of two Influences, the tight winding streets of an Asian or Arabic town interwoven with European, classical Russian and Art Nouveau architecture. The northern edge is the recently renovated **Abanotubani** area, famous for its **Sulphur Baths** and **Meidani** square with its many restaurants. Old Town's main artery is **Kote Abkhazi Street** (formerly Leselidze) which connect Meidani with Freedom Square.



In the North East corner, between Leselidze and the river, is **Chardeni**, a small area backed with bars restaurants, nightclubs and cafes, shoulder to shoulder along a series of pedestrian streets. To the west, Old Town melts into Sololaki area, a lovely and fascinating place to wander around, take photographs and explore Tbilisi.

Open-Air Museum of Ethnography

This collection of traditional, mostly wooden houses, collected from all around Georgia, is spread over a wooded hillside with good views, and makes for an enjoyable visit. The most interesting exhibits are in the lower section, where the buildings are kitted out with traditional furnishings, rugs and utensils.



TUSHETI is a national park and one of the most ecologically unspoiled regions in the Caucasus. It is a popular area for mountain-trekking. The Tushetians are sheep herders, and the region is famous for its Tushetian Gouda cheese and high quality wool. The local shepherds spend the summer months in the highland areas of Tusheti but live in the lowland villages of Zemo Alvani and Kvemo Alvani in the wintertime. You will find the nature breathtaking, and the people very hospitable. The roads are hazardous and open only a few summer months. **Omalo** is located on a natural plateau, connecting three main gorges: **Chanchakhovani** gorge, **Chaghma** gorge, **Pirikiti** gorge, and **Gometsari** georgee. The fortress of **Keselo** is with it's towers a landmark in Zemo (upper) Omalo.



KHACHAPURI is a traditional Georgian dish of cheese-filled bread. The bread is leavened and allowed to rise, and is shaped in various ways. The filling contains cheese - fresh or aged, most commonly sulguni, eggs and other ingredients. According to a 2009 survey 88% of Georgians prefer khachapuri to pizza. There are several distinctive types of khachapuri in Georgian food from different regions of Georgia: Imeretian, Adjarian, Megrelian, Gurian, Svanuri.

BATUMI is located in the autonomous republic of Adjara. European architects undertook numerous projects in Batumi at the beginning of the 20th century, and today it remains a hub of architectural innovation. One of the most beautiful regions in Georgia, Adjara is situated in southwest Georgia on the Black Sea coastline. Adjara's visitors especially admire the region's pristine and unaltered nature, and it is particularly intriguing for eco tourists.

Batumi's interesting historical past has considerably influenced the architectural diversity of city a number of projects were completed by European architects during the Porto Franco period. Old Batumi's most historical part is stretched between the seaport and the Boulevard, and features distinctive building facades and balconies. Boasting one of the widest varieties of flora in the world, the Batumi Botanical Garden is 111 hectares and contains flora from nine phyto-geographic areas.



MTSKHETA is an ancient town located about 20km out of Tbilisi. It was the capital of the eastern Georgian kingdom of Iberia from the 3rd century BC to the 5th century AD. Mtskheta was the site of Georgia's adoption of Christianity in 334 and remains the headquarters of the Georgian Orthodox Church. Svetitskhoveli Cathedral is one of the most interesting highlight of a trip to Mtskheta. It was founded in 1010, built on the site of Georgia's first church, and contains the graves of the ancient Georgian kings, including Sidonia, who was said to have been buried holding Christ's robe. Jvari Monastery is situated on a cliff above Mtskheta. It was founded in the 6th century. It is the culmination of a number of artistic and architectural aspiration in early Christian Georgian architecture. The view from above is amazing.





Elizbar Elizbarashvili - Main coordinator, Association of Professional Chemists of Georgia

Georgia became the member of the IChO in Vietnam 2014, but my first participation to IChO was in Washington when I was an observer. I still remember this exceptional event so clearly like as if it was yesterday. At the end of the Olympiad organizing committee have distributed special quaternary for feedback for participants. Questions seemed to be very standard and simple to answer except the last one, which was like this - is it possible your country to be considered as the host country for the future IChOs? I was thinking more than five minutes. Georgia as a small country and IChO – so huge event was so incomparable. When I just have started to mark a small square beside “NO” suddenly something whispered in my mind - in the science there is everything possible theoretically! Really, theoretically everything is possible... in future... not tomorrow, not next year or after it, somewhere beyond of the visible and imaginable... And I lost in the deep dreams marked the answer “YES”. Only four years have been passed after this event and this mystical future has become the tangible reality. And now, working on the IChO-48 with excellent team: Chair Giorgi Jghenti, Malkhaz Khoperia, Gia Khatisashvili, Kakha Didebulidze, Natia Ochkhikidze, Revaz Korashvili and many other my colleagues and students, I am asking myself: is this reality or dream? Georgia and IChO sounds very nice together but means very much more!



N3

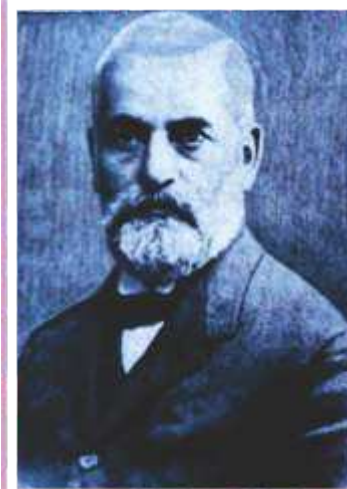


Catalyzer

July 23 - August 1, 2016

Petre Melikishvili

The first rector of the Tbilisi State University Petre Melikishvili was a chemist. His work was about organic and inorganic chemistry issues; He was the first who got the class of organic admixture, called glycidic acid. In 1939 his reaserches about the peroxide and superxide was published as a monograph. Under his leadership four chemical laboratory was founded at Tbilisi State University. He set up the departments of inorganic, organic chemistry and agriculture. Institutes of Physics and Organic Chemistry in Georgia is named after Melikishvili.



Niko Nikoladze

Niko Nikoladze was a notable Georgian writer, pro-Western enlightener, and public figure primarily known for his contributions to the development of Georgian liberal journalism and his involvement in various economic and social projects of that time.

Elene Akhvlediani

Elene Akhvlediani was a 20th-century Georgian female painter, graphic artist, and theater decorator. Akhvlediani is famous for her depictions of Georgian towns, for her illustrations, for the works of famous Georgian writers and for designing plays in the Marjanishvili Theater in Tbilisi, Georgia.



Elene Akhvlediani, Tbilisi

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nika Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Photocorrespondent: Nikoloz Mdinardze

Sponsors



Media Communication Support



Dr. Gabor Magyarfalv
Chairman of Steering and Scientific Committee

I want to thank the government - Ministry of Education and Science to make decisions very quickly that Georgia would be the host country for Olympiad and all the organizers for their dedication. I dare to say that one week from now, in the upcoming week we will have great time in Georgia, we will enjoy meeting each other, we will enjoy Chemistry as well and at the end, I am sure, we will feel sorry that these ten days have passed so quickly.



Dr. Duckhwan Lee
Former Chair of Steering Committee, Professor

I have been involved in International Chemistry Olympiad for more than 10 years already. We - organizers held it in many countries. I can list you these countries thoroughly by years. If you ask me how Georgia is distinguished with these countries my answer will be that, only in three months your country and organizing team coped with the boundless work and have done it perfectly.



Alexander Gladilin
Chair of International Chemistry Olympiad Committee

I was extremely happy when I heard that the host country this year would be Georgia. Actually I have never been in this country before and have the opportunity to know a culture and people. I have already managed to have sightseeing tour in Old Tbilisi and Mtskheta. As well I tasted Georgian cuisine.



George Zhgenti
Chair, Deputy Director, Shota Rustaveli National Science Foundation

This process may be estimated with the only word - witchcraft. Actually, with the smallest amount of time and human resources we managed to do much more than the other, a very famous and successful countries have been making. We made it real that International Chemistry Olympiad to be held in Georgia. The main part is still ahead. I do not want to anticipate event, however, I am sure that the Olympiad will be successful. We are absolutely ready for it.



Gia Khatisashvili
Professor of Agricultural University of Georgia

The Agricultural University of Georgia is absolutely ready for the Olympiad. All the special spaces are prepared and all required materials for the practical examinations are neatly put on the numbered tables. As well as we have already prepared detailed schedules for students, mentors and guests. Lots of volunteer students, with special uniforms, are at the university corridors and they are ready to take care of any organizational details.

Organizers



ICHO 48-th Opening Ceremony at the Rustaveli National Theatre

ICHO 48-th's official opening ceremony was at the Rustaveli National Theatre. Minister of Education and Science Aleksandre Jejelava and main organizers made a special speeches for the audience.



Astrid Coste from France:

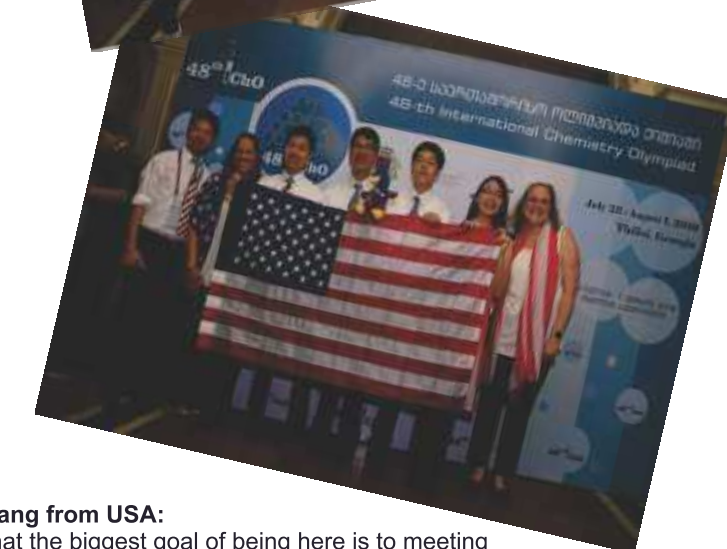
In my mind Olympiad means getting great experience, meet a lot of people from all over the world. I hope that I will explore Georgian culture, meet great people and great scientists, discover new things about chemistry as well.



Andrea from Italy: This Olympiad is a great challenge for me and my team. It will be a big competition among so many nations. Actually, this experience will be fundamental for all of us to share knowledge with each other's cultures and make new relationships.



At the opening ceremony ICHO's students, mentors and special guests were shown Georgian traditional folk music and national dance. At the end the event all the teams from different countries were introduced with each other.



Kevin Tang from USA:

I think that the biggest goal of being here is to meeting new people from different countries, making new friends and if I win it will be just bonus. I hope that I will do my best and the great motivator is that I am with people who love chemistry as much as I do.

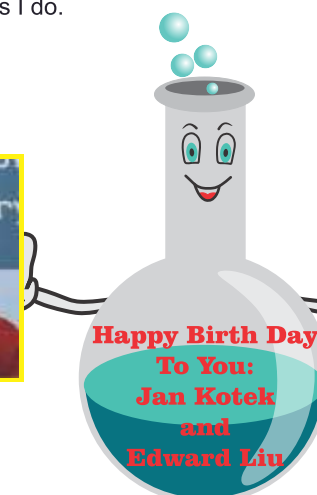


Ramil from Azerbaijan:

It is my first time participating International Chemistry Olympiad. I hope to be back to my country with a medal and an excellent experience. I wish all the teams good luck!



Hamzah from South Africa: I like Tbilisi so much. I know that this city has a big history and I would like to have some free time to have a sightseeing tour. Most of all I like beautiful architecture and old buildings. And about the Olympiad, my team will do it's best to achieve our goal.





Catalyzer

July 23 - August 1, 2016

July 23 - August 1, 2016

Sighnaghi

This is the city of wine and love. It is suitable for someone who is tired of rush and hustle, and like everything lovely, cute and small. Signnaghi is the city of romantic cobbled streets, carved balconies, 24/7 marriage registration. Signnaghi is famous for its long city walls: there are well preserved 4.5 kilometer of stone walls - which stretch along small mountain ridges. There are two entrances to the wall, so you can stroll along it and admire the Alazani Valley.



Sarajishvili Brandy was founded in 1884 by David Sarajishvili, who had studied Philosophy in Germany. His great desire was to develop the Georgia and its economy. While his specialty had been wine and cheese, he was influenced by all the spirits he had seen in Germany, and he decided to study Cognac production, and to go to France to do it. Since he didn't have traditional Cognac grapes, he substituted the Georgian grapes closest to the desired French grapes: Chinuri, Goruli Mtsvane, Kakhuri Mtsvane and Tsitska, looking for high acidity and resistance to humidity.



მე ვარ
I am
[Me var]

მე მევია	მე მიყვარს ქიმია
My name is	I love Chemistry
[Me mkvia]	[Me mikvars kimia]

სადაური ხარ?
Where are you from?
[Sadauri khar?]

Pelamushi, second name Tataru, is a favorite Georgian dessert made mainly with pressed, condensed grape juice which is called Badagi. Pelamushi can be made with flour or flour plus corn flour. Inspire of the fact that you can buy and taste Pelamushi during the different seasons of the year, dessert is famous and the most delicious in Autumn, during the vintage time.



Churchkhela is a homemade Georgian dessert. Georgians usually make Churchkhela in Autumn when the primary ingredients, grapes and nuts, are harvested. It is a string of walnut halves that have been dipped in grape juice called *Tatara* or *Phelamushi* (grape juice thickened with flour), and dried in the sun. No sugar is added to make real Churchkhela. Instead of walnuts, sometimes nuts or almonds are used in the regions of west Georgia. The shape of Churchkhela looks like a candle, but some people say it looks like a sausage.

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nika Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Photocorrespondent: Nikoloz Mdinaradze

Sponsors

Media Communication
Support

Organizers





Niko from Serbia:
I am looking forward to having a good time here in Tbilisi and exploring Georgia. I wish I would win a medal. My family and friends would be so excited.

Martin from Slovenia:

I hope to meet as many people as I can during these ten days. Slovenian delegation couldn't explore the city yet as they came couple of hours ago, but I would like to get to know Georgia and Georgian people. I think people here are very friendly and nice.



Saudi Arabia Delegation:

It is our first time in Tbilisi, Georgia. We will for sure take leisure time and make a sightseeing tour meanwhile official part of the Olympiad. We are looking forward everything good and special from Georgia - the weather, food, people, everything.



These are IChO student and their own talismans. As they say, talismans give them good luck and success.

Chemistry - Travels Itself and Let Us Travel



Pakistan - Pakistani K.M Khan
(Head mentor)

At the international Olympiad we are participating since 2004. I was an observer in 2004 in Germany. We are always getting prizes, but this year unfortunately one of our selected students injured a leg, she couldn't move, so this year 75% of team is presented. I still hope this Olympiad will be lucky for us.



Russia - Ilya Glebov (Head Mentor)
I think my students will manage to handle the tasks. Traditionally on IChO experimental problems are very hard, there are many technical things to do but this time there are less thing that need hands but more things to do by the brain. So they will need to think a little bit more.



IChO Tasks Discussions



Nigeria - Cris Christopner Ikechukwu
(Head Mentor)
I definitely expect my students to handle given exercises. We did preparations so they should handle it very well. Olympiad for students means to check the IQ, enjoy the competition. Olympiad does not separate good students from bad ones.



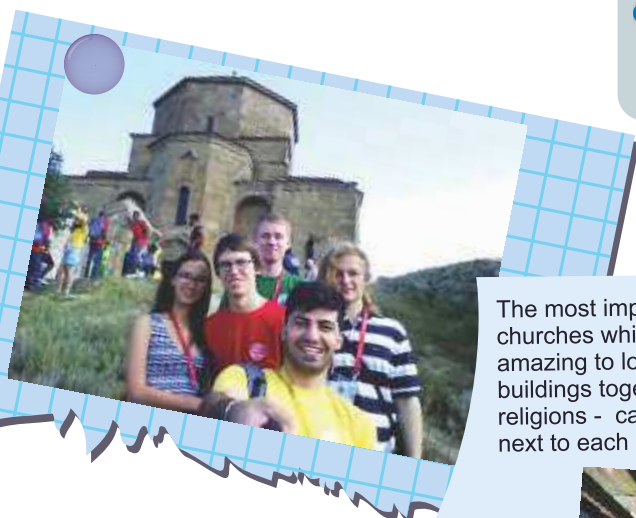
France - Clement Guibert (Head Mentor)

I am sure my students will do their best, I am very happy with the way exercises are written because they are quite clear. I think exercises are not extremely difficult. Georgia is a very interesting country, I am very happy to be here, I am delighted by the weather and people of course and I think this is a great start for Olympiad.





When we came to Mtskheta we felt the atmosphere of ancient ages. It was like traveling back in time. The houses, the roads made with stone, churches... Everything was creating the spirit.



The most impressive thing is to see churches which are very ancient. It is amazing to look through modern and ancient buildings together and feel the magic joint of religions - catholic and orthodox churches next to each other.



It seems that Mtskheta is the warmest, most beautiful town I have ever been. Amazing views and hospitable people are the best sides of this brilliant town. I am sure I will be back here again.



Open-Air Museum of Ethnography

This collection of traditional, mostly wooden houses, collected from all around Georgia, is spread over a wooded hillside with good views, and makes for an enjoyable visit. The most interesting exhibits are in the lower section, where the buildings are kitted out with traditional furnishings, rugs and utensils.



27th July
27°

28th July
24°

29th July
28°

N5



Catalyzer

July 23 - August 1, 2016



United Kingdom - Ben Pilgrim (Head Mentor)

I hope this Olympiad will be success for our team as we have trained them students well, particularly in organic tasks. I think the tasks have good level of difficulty and not all the students can settle. I like the problem solving nature of tasks this year.



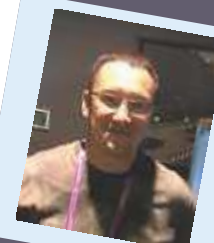
Switzerland - Alain Vaucher (Head Mentor)

I think students need quite a lot of knowledge because they have to settle difficult questions. Our students are well-prepared and I am very optimistic. I am looking forward to staying here after the Olympiad for 10 more days to see the city.



Australia - Tim Cashman (Head Mentor)

I think that our team will do pretty well. We've trained them the best we can, I think they will be alright. Tasks are relatively difficult but I think it's fair. I really like Tbilisi as this city has it's own character. Mostly I like mountains.



Ukraine - Konstantin Gavrylenko (Head Mentor)

I think that our students will be able to experience Georgian hospitality. For me visit to Georgia is a new challenge. This Olympiad is the highest level for all young chemists as well as for the mentors.

IChO 48-th Practical examination at Agricultural University of Georgia.



Happy Birth Day to Lara Nobili

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nika Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Photocorrespondent: Nikoloz Mdinardze

Sponsors



Media Communication Support

Organizers



ICHO 48-th Practical examination at Agricultural University of Georgia.



Norway Delegation:

We really liked the Opening Ceremony. National dancers were amazing and also the acapella group made a big impression on us. We were looking forward for wine tasting, but sadly it's not allowed for us.



students have been enrolled there, Agricultural University of Georgia got fourth place in the rating among 60 University in Georgia. This is the area where now ICHO 48-th is taking place.

Agricultural University of Georgia is one of the most developing and successful university. It became one of the top-rated university when in 2011, moved in the management of Knowledge Foundation, founded by Kakha Bendukidze. In 2015, according to the average scores of

Kakha Bendukidze

Kakha Bendukidze (20 April 1956 – 13 November 2014) was a Georgian statesman, businessman and philanthropist, founder of the Knowledge Foundation and head of the supervisory board of Agricultural and Free Universities. He was known as a committed libertarian and strong supporter of market economy, deregulation and privatization, stating that the Georgian government should sell everything except its honor. Under his leadership, Georgia became the top-reforming country in the world, according to the World Bank's Doing Business report. In particular, Georgia jumped from 137th to 11th on the ease of doing business scale, ahead of Germany and France.



Hungary Delegation:

We would like to make conversation with people to share the views and interests. We would like to get to know Georgia, because it is not the common tourist destination place for us. Actually we have a great desire to go to our country with a medal.



Argentine Delegation:

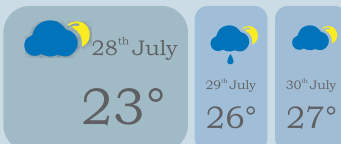
This event is important to get know other cultures and traditions. In these days we have learned so much about Georgia, the country which we knew nothing about. we always try to talk to as many people as we can to get to know them, because even though the thing that unites us is chemistry, each of us also live on earth, under the same roof.

Mtatsminda Bombora park

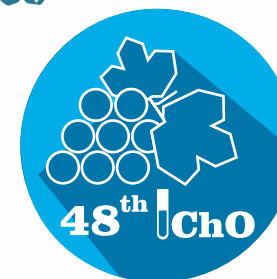
Mtatsminda is the mountain topped by the 210m-high TV mast that overlooks central Tbilisi. Located 800-metres above the city Mtatsminda Park (known as Bombora) spreads over more than 1 sq km and has been a popular fun spot for generations.

There are attractions include a flume ride, numerous children's rides and a water play-splash area, a Sartori Roto Techno, mini Mine Train coaster, a bee-themed jet ride, a spinning coaster, Fabbri drop tower, reverse bungee, slide and dark ride. There are numerous, reasonably priced outdoor cafes. An 80 metre ferris wheel provides wonderful views of the city.

The Park has beautiful gardens with lots of tall trees, providing much needed shade during the summer. There are lots of intriguing, colorful buildings and large scale sculptures. Stroll around or take the land train to enjoy the sights.



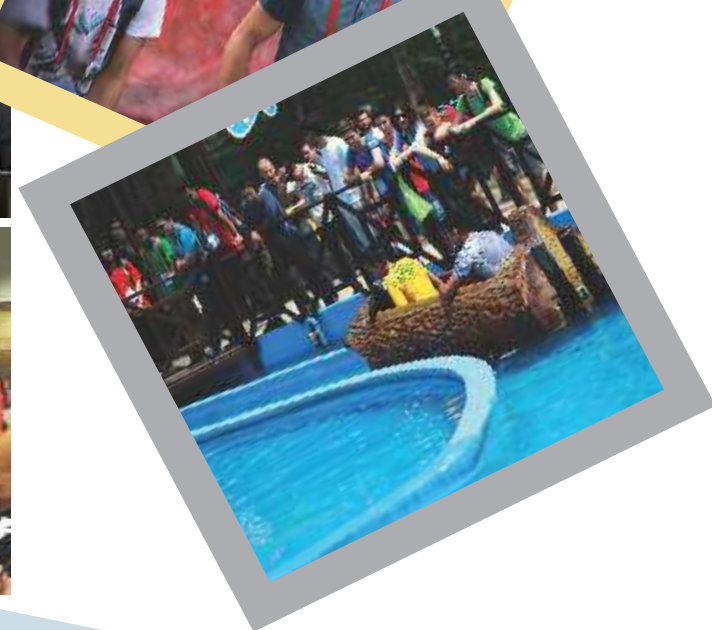
N6



Catalyzer

July 23 - August 1, 2016

Translation of theoretical exam and voting



Jingjia Liu from China
(Student)



I think there were interesting and exciting experiments to do but it was also weird as my country hasn't practiced something like yet. Actually, it was good to learn form of the exam itself. I still believe that we will be successful.

Piero Beraun from Peru
(Student)



We were very nervous before the exam. We were even talking about it in the bus. We thought it would be very hard. But now we think it was alright and everyone is happy about it. It was quite manageable to do the tasks. There was no trouble in our room and we think in other rooms as well.

Dinh Quang from Vietnam
(Student)



We think the third task was very difficult. First one was normal. But everything was well organized and the exam went well. We want to wish good luck to all the students and cheer them up.

Siradanai Rimsakorn from Thailand
(Student)



Actually, the exam was a little bit complicated for me. Mostly the organic part. It was nice that exam was divided into two parts. Now I feel more free and comfortable when this part is over.

Davi Aragao from Brazil
(Student)



I think it was nice that exam was divided into two parts, we could situate ourselves better. As for me all the needed equipment have worked well and I didn't face any kind of problem in that part.

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nika Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Photocorrespondent: Nikoloz Mdinardze

Sponsors



Media Communication Support

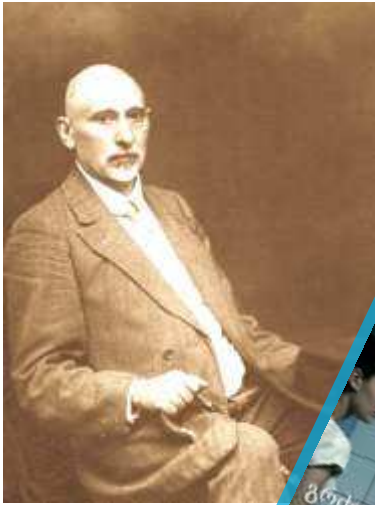


Organizers



Ekvtime Takaishvili

Ekvtime Takaishvili was a Georgian historian, archaeologist and public benefactor. In 1917, he was among the founders and professors of the Tbilisi State University. He lost his tenure both in the parliament and at the TSU in 1921, when the Bolshevik Russia's 11th Red Army put an end to Georgia's independence. He followed the Georgian government in their French exile, taking the Georgian national treasury – numerous precious pieces of Georgian material culture - with him to Europe. The treasury contained into 39 immense boxes, were shipped to Marseille and placed in a bank depository. Subsequently this precious cargo was transferred to one of the banks in Paris. Although the treasury was officially the property of the Georgian government-in-exile, it was actually Ekvtime Takaishvili who supervised this huge collection. Despite numerous attempts by various European museums to purchase portions of this treasury, and extreme economic hardship, Takaishvili never sold a single piece of the priceless collection to live on and guarded it.

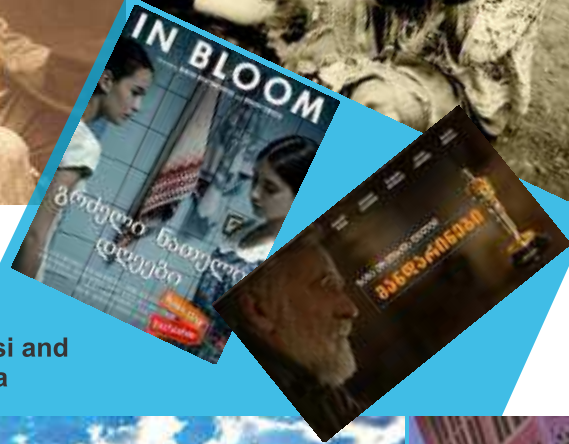


In photos Tbilisi and Batumi, Georgia



Georgian Cinema

The cinema of Georgia has been noted for its cinematography in Europe. One of the most acclaimed Italian film directors, Federico Fellini, was an admirer of the Georgian film: - Georgian film is a completely unique phenomenon, vivid, philosophically inspiring, very wise, childlike. Georgian cinematography reputation has been built by known cinema directors and choreographers such as: Dodo Abashidze, Tengiz Abuladze, Temur Babluani, Mikheil Chiaureli, Revaz Chkheidze, Rusudan Chkonia, Lana Gogoberidze, Otar Ioseliani, Nana Jorjadze, Sergei Parajanov, Eldar Shengelaia, Giorgi Shengelaia, Nikoloz Shengelaia.



Imeretian cheese

is a fresh cow's milk cheese. Although it originated in the Imereti region, you can find it everywhere in Georgia, whether it's homemade or bought at the market. This is the cheese traditionally used in khachapuri, the infamous Georgian cheese bread.

Georgian Gouda is a raw cow's milk cheese that is aged more than 60 days. The cheese has a deep yellow color, is very dense, yet creamy and has a little tart, tangy flavor at first which slowly fades to a smooth finish with some sweetness.

Sulguni is a brined Georgian cheese from the Samegrelo region. It has a sour, moderately salty flavor, a dimpled texture, and an elastic consistency. Its color ranges from white to pale yellow. Sulguni is often deep-fried, which masks its odor. It is often served in wedges.



Argentina - Sergio Bonesi and Vicente Povse (Head mentors)

I think that there are some very difficult questions that need imagination to solve. Some topics are basics and them can make students confused. Olympiad is very interesting for student and they are prepared thoroughly to do practical and theoretical exams. Actually we fell in love with Georgia. The Country was a quite surprising, the cuisine is great, especially Khinkali

India - Savita Ladage and Radha Jayaram (Head Mentors)

We think that our students will be able to handle the tasks. This part is not easy but in our opinion not too difficult. These tasks are fair enough for all the competitors. This is part where the students should have to think really hard. We think that average student can not manage to handle them. Georgia is a lovely country. At first we were a little bit worried, because we were not sure whether people knew English and manage to answer our questions, but everyone here is so professional, educated, friendly and helpful. So the atmosphere is really comfortable.



Latvia - Kaspars Veldre (Head Mentor)

I think, that the exercises are quite interesting and the students should be able to do them. The questions are from different chemistry fields. Some problems look difficult and require really a lot, deep thinking. Georgia is a great country with very nice people. Tbilisi is amazing city to walk around.



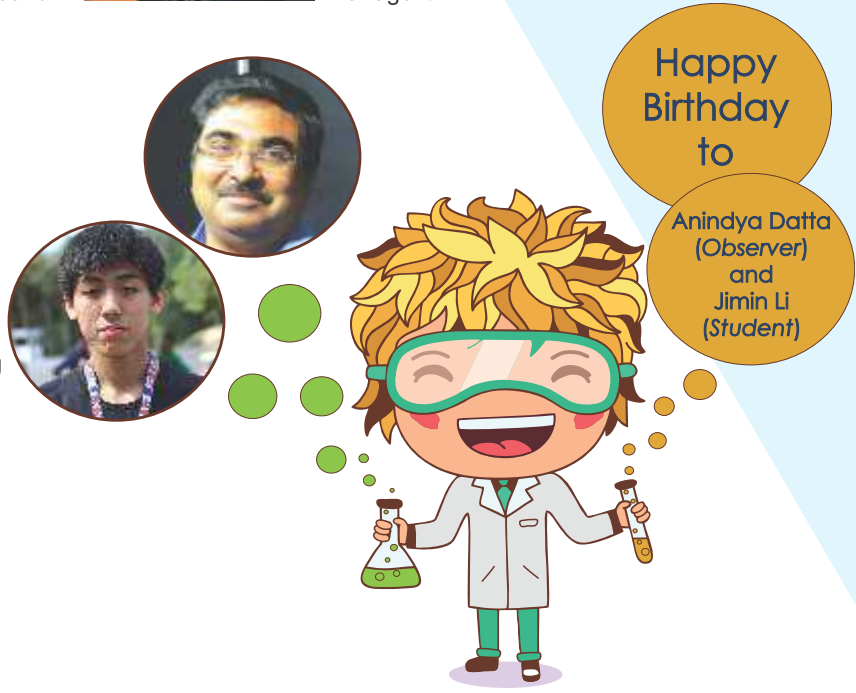
Estonia - Lona Sutt (Head Mentor)

Well, throughout the years our team has been a bit weaker in organics and stronger with the physical chemistry. In general they will do their best as always. Solutions are very shuffling, they need a lot of thinking to solve. If they think hard and stay calm they will manage it.



Prometheus Cave

Discovered in Imereti region in 1984, Prometheus Cave is one of Georgia's natural wonders providing visitors with breathtaking examples of stalactites, stalagmites, curtains, petrified waterfalls, cave pearls, underground rivers, and lakes. Khvaml Mountain is visible from Prometheus Cave and is the place where legend says that Prometheus was chained. The 1060 meter walking route through the cave was upgraded in the summer of 2012 and visitors can enjoy a 280 meter boat tour on an underground river. There you will see stalacites, stalamites, helictities, travertines, stoned waterfalls, cave pearls, subterranean river and lakes. The underground track is about 1.2km. Total around 16 caves linking by 4 huge halls.





29th July
25°

30th July
28°

31th July
25°



Catalyzer

July 23 - August 1, 2016



Head mentors, observers and IChO guests having happy meal and fun at the Agricultural University of Georgia

Georgian enamel MINANKARI



Georgia is famous for its art of color and boundless energy. For many centuries it was amazing symbiosis of Georgian, European and Oriental influences. At the XIX century was the recovery and development of Georgian culture with the recreation of unique technology of the past and developing new. This happened with the famous jewelry Georgian cloisonne enamel Minankari. This jewelry of amazing beauty hit with incredible subtlety of color solutions. The method itself remains unchanged for twelve centuries, and its cost is not less than jewelry made of precious metals and stones.

Elarji is a popular dish from Samegrelo region, made from coarse cornmeal, cornflour and Sulguni cheese. Ingredients: 200 grams of coarse cornmeal, 4 tbs of cornflour and 1 kilo of sulguni cheese. The cheese must be new. Mozzarella cheese can be used as an alternative to sulguni. Add the coarse cornmeal to a deep pot and water. Any impurities and discolored cornmeal will rise to the surface. Carefully drain the water and remove any floating impurities. Refill with water and keep repeating the rinsing process until all impurities have been removed.



Elarji

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nika Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Sponsors



Media Communication Support



N7

Nadine Szczepanski from USA (*Scientific Committee*)

It is my first time in Georgia. This country is absolutely amazing. Weather is perfect as well as traditional cuisine. I should mention Khinkali, dumplings which is one of the most tasty food I have ever had. Thank you for your hospitality and well organized Olympiad. One day I will be back to Georgia for sure.



Kurt Nielsen from Denmark (*Head Mentor*)

I am looking forward for the results. According to the fact that the tasks were absolutely normal and not too difficult my students should have done them well. I like Olympiad in Georgia and this country itself. I like food, people and everything. Hope to be back here as a tourist one day.



Nobuhiro Kihara from Japan (*head mentor*)

I am involved in IChO from the very beginning. Olympiad in Georgia is another very good experience. Tasks were absolutely normal and in my opinion most of the students could handle them. And about the Georgia I am fond of the weather here, food and people, who are so warm and hospitable. I want to thank the government, organization team and all the people involved in the process for their dedication.



Vazha-Pshavela



Vazha-Pshavela simply referred to as Vazha is the pen name of the Georgian poet and writer Luka Razikashvili noted Georgian patriot and author of the highest calibre in the field of Georgian literature. Vazha-Pshavela is the author of many world-class literary works – 36 epics, about 400 poems, plays, and stories, as well as literary criticism, journalism and scholarly articles of ethnographic interest. Even in his fiction he evokes the life of the Georgian highlander with a near-ethnographic precision. Vazha-Pshavela deals powerfully with the problems raised by the interaction of the individual with society, of humankind with the natural world and of human love with love of country.

*"He is my guest, this day,
Though he owes me a sea of blood,
I cannot betray him.
I swear it, by God, his creator."
Host and Guest - By Vazha-Pshavela*

Organizers





Telavi, the capital of the Eastern province of Kakheti, is home to several of the region's world-famous wineries, art museums, castles and a theater highlighting folk singing and dancing. Telavi is located at the crossroad of the region and is one of the most interesting and amazing city to see. Cholakashvili Street is one of the most beautiful streets in the city, and has been recently renovated. The homes on this residential street are adorned with colorful gates and intricately carved balconies. Batonis Tsikhe castle served as the residence of Kakhetian Kings between 17th and 18th century. The castle encloses two churches, the ruins of a royal bathhouse, and the Persian style Palace of King Erekle II.

Nadikvari Park is a wonderful place for leisure. One will find walking trails, beautiful nature, playgrounds, an open-air theater, concert arena and plenty of other attractions. The almost 900 year old Giant Plane tree is one of the oldest and most unusual attractions of the city. Old Shuamta is one of the oldest preserved Orthodox churches in Georgia, dating back to the 5th century. The complex also incorporates two dome churches constructed in the 7th century. Ikalto Monastery complex incorporates three churches dating back to the 6th, 9th and 12th centuries. During the 19th century, the Tsinandali complex belonged to renowned Georgian poet and public figure Alexandre Chavchavadze. The complex consists of a beautiful garden with over 1,000 varieties of trees and plants from all over the world. Furthermore, within the premise there are wine cellars with unique collections of wines. The earliest structures of the Alaverdi Monastery date back to the 6th century, although the present day cathedral is a part the 11th century Georgian Orthodox monastery. Alaverdi is located 18 kilometers from Telavi and is one of the tallest religious buildings in Georgia. The surrounding courtyard is home to vineyards from which local monks make their own wine.



Jasson Rodríguez from Costa Rica (student)

Actually I was pretty calm before the exam even though I didn't know what to expect. I think it was nice to have a break as 5 hour exam is very long. Of course after the exam I was tired but now I'm very relaxed.



Kate Zator from England (Student)

I liked the first task, the second one was a ride and the third was a bit of a big mystery at first, but when I was working through it everything seemed kind of logical. I really like the mountains around here, because we don't really get many of them in England.



Andy Sardjan from Netherlands (Student)

The exam was very hard. I'm not sure if I'm going to get a medal. It was really well organised. There were 300 people so it was a little bit different experience. Georgia is really pretty. I like old churches but roads are a little bit chaotic.



Arnur Makenov from Kazakhstan (Student)

I've attended the chemistry Olympiad last year in Baku and comparison to it this year tasks were much easier. I really liked having a break as it was nice to steam out a little bit. Thank you for everything - your much attention, care and well organized Olympiad.



Amam Oghenefejro from Nigeria (student)

It was a little bit easier than I was expecting. And I'm hoping for something really good. The Lab assistants were very helpful and everybody was right on time.



Joyce Tian from USA (Student)

I'm not sure how well the exam went but it was really fun. I think it was nice to see myself under the real professional conditions. Our guides have been always super duper helpful, they are like our saving grace. I think Georgia's nature is gorgeous. I come from DC, where there are basically no trees. Quite frankly, I think Georgia is one of the prettiest places I've ever been to.



Sharifuddin Md Zain (Head Mentor) - Malaysia

We always hope for the best, our students have gone through enough training. The problem is that they don't have much training in the practical part, they've done a lot more in theoretical part. I've been in the Olympiad since the first time which was in Hungary. I think the Olympiad is well organized considering the fact that you had very short time to do it and I congratulate Georgian team for doing this.



Rickard Lindroth (Head Mentor) - Sweden

My students will do practical part very well, it might be difficult to find strategy and work out the full solutions but we will do pretty well. And probably theoretical part is more challenging for them. Exercises are quite fair this year, they are solvable. Georgia for me is very nice, I like the food here I think people are very nice. I am looking forward to go to the old city because I've heard it's pretty.



Ajay Bissessur (Head Mentor) - South Africa

Actually we are well prepared for practical tasks. We had a few sessions where we went through actual practice so I think they are ready for the practical part and I think they will do well. Definitely the theoretical part is harder because the time factor. Georgia for me is a beautiful country, good food, lovely weather. And also this is our first time on Olympiad as a country, we've been observers for the past two years.



Nino Casapullo (Head Mentor) - Italy

We have two students from last year so they potentially will be able to have good results, the other two students are younger. I think that this year tasks are easier than last year, this is my second time on Olympiad.



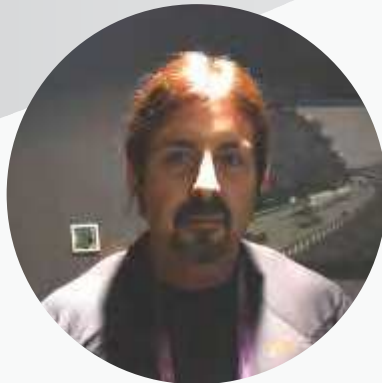
Miguel Chong (Head Mentor) - Peru

Our students have been studying this things all year. The theoretical part is much harder because the organic part is very difficult. Actually, Georgia is a very beautiful country, people are very friendly and we are very happy to be here.



John Jakhongir (Head Mentor) - Uzbekistan

I think that many students can handle this laboratory work very easily, because nowadays chemistry in many countries is developing very quickly. The level is quite difficult but I think our students can manage it. Without any hesitation I can say that theoretical part is harder.



Robert Vega-Baudrit (Head Mentor) - Cost Rica

Georgia is a very different country for me. I think this place has a very good potential in all aspects in near future for tourists. The most amazing here is the weather, also people are very nice and hospitable. I am sure I will be back soon.



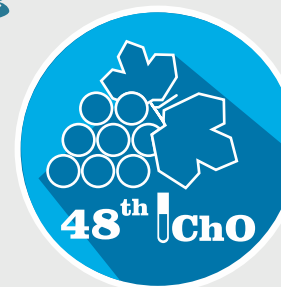
Happy Birthday
Dear Robert



ICHO participants at reunion party

30th July 27°
31st July 29°
1st August 24°

NB



Catalyzer

July 23 - August 1, 2016

Follow the way of IChO

Georgian National Museum

The unification of ten different museums, the National Gallery, four house museums and two research centers in one system in 2004 formed the Georgian National Museum (GNM), the largest museum complex in the country today.

The Georgian National Museum presents internationally significant collections of art and dynamic, changing exhibitions, providing audiences with inspiration and knowledge of the wonderful world of culture, art, science and education. The evidences and proof of the oldest human existence in Eurasia are displayed together with magnificent Medieval Christian art, stunning gold and silver jewelry from the ancient land of Colchis, spectacular modern and contemporary paintings of Georgian artists and masterpieces of the Oriental, Western European and Russian decorative arts.

Happy Birthday to Martin Groeneveld

Reporters: Nika Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Photocorrespondent: Nikoloz Mdinardze

Media Communication Support

Sponsors



Igrar Nazarov from Azerbaijan
(Scientific Committee)

Last year this Olympiad held in Baku and I absolutely realize how difficult is to prepare it perfectly. Georgia managed to handle all of this enormous work only in three months. I want to thank all the organizers who are the great hosts now. As well as, I hope that Azerbaijan team will have luck and medal.



Tika Butkhuze from Georgia
(Head Mentor)

Georgia participates at IChO for the third time now. We do not get any medal yet but I hope this year we will have success. This Olympiad is an amazing chance for students to get new contacts from their peers from all over the world. I wish good luck to all the participants.



Talipbaevna Salieva from Kyrgyzstan
(Head Mentor)

Georgia is a very interesting country. It is my first time here and I am very happy. I am delighted by the weather and people of course. Thanks to the government and organizers to make this olympiad so great for us.



Ondrej Simunek from Czech Republic
(Observer)

Exercises are quite interesting and the students should be able to do them. The questions are from different chemistry fields. Our mentors were working hard to prepare the students well, so I think our students will achieve some good results. Georgia is a great country with very nice people. The mountains are amazing here.

Organizers



Rusudan Petviashvili

Rusudan Petviashvili is Georgian artist, graphic artist. Creates paintings using unique technique - total image is performed in one-touch. Petviashvili's works and lives in Tbilisi, few months a year she works in Berlin, Geneva and Paris where she has a studio. The artworks of Rusudan Petviashvili can be seen at the National Art Museum of Georgia, Tbilisi, the National Museum of Adjara, Batumi and the Museum of Arts in Kutaisi. Petviashvili's paintings are kept in the family collection of such political leaders as George Bush, Eduard Shevardnadze, Ilham Aliyev, Margaret Thatcher, writer and screenwriter Tonino Guerra, diplomats Richard Miles and Fabrizio Romano, and at the head office of the World Bank.

Giya Kancheli

Giya Kancheli is a Georgian composer resident in Belgium. While living in Antwerp since 1995, he became composer-in-residence for the Royal Flemish Philharmonic. In his symphonies, Kancheli's musical language typically consists of slow scraps of minor-mode melody against long, subdued, anguished string discords. Kancheli has written seven symphonies, and what he terms a liturgy for viola and orchestra, called Mourned by the Wind. His Fourth Symphony received its American premiere, with the Philadelphia Orchestra under Yuri Temirkanov, in January 1978. Kancheli has seen world premieres of his works in Seattle, as well as with the New York Philharmonic under Kurt Masur. He continues to receive regular commissions. New CDs of his recent works are regularly released, notably on the ECM label. He has written music for dozens of films.

Georgia Tbilisi TV Broadcasting Tower is a freestanding tower structure used for communications purposes. The tower is located in Tbilisi, Georgia and was built in 1972. Communication systems on the tower include regular broadcast, MMDS, pager and cellular, commercial TV, and amateur radio repeater. The tower is 274.5 m high on a mountain at 719.2 m above sea level. Nowadays Tbilisi TV Broadcasting Tower is one of the most popular sightseeing of Tbilisi.

Satsivi

Satsivi is holiday food, a sacred sort of dish, especially when made with turkey. It tastes like warm earth, if the earth were delicious. Satsivi is made of walnuts and served cold, either as a dipping sauce for bread or sauce for boiled or fried game or fish. Traditionally, Satsivi is made of walnuts, water, garlic, a combination of dried herbs, vinegar, cayenne pepper, and salt to taste.



Astrid Coste from France (Student)



Fun Man Fung from Singapore (Observer)



Zhihan Nan from Singapore (Student)



Saba Tavdgiridze from Georgia (Student)



Norwegian Delegation (Students)



Susanna Kyrakosian from Armenia (Student)

Astrid Coste from France (Student)

Olympiad for us is a great challenge to face Chemistry tasks, to find ourselves in competition and work hard for a big results. As well as IChO gives us an opportunity to meet new people, share experiences and have fun together.

I want to say great thanks to the government of Georgia, organizing committee, all the people who were involved in this Olympiad for their hard work and dedication, for everything they have done perfectly for us. I hope to be back one day but there are so long distance between Georgia and Singapore.

I liked the Olympiad. It was so comfortable that we, like professionals, had everything to work on the tasks. I wait for the final results. Hope that my country will get medal and be back proud to Singapore.

Olympiad is a great experience for me. I am participating for the first time. We are living in the hotel Astoria with foreigner peers and all this time we had chance to get know each other, having fun, share experiences. I knew that the tasks would not be easy. Now I can say that practical task was easier and logical for me, but theoretical one was difficult. Hope that we will have success.

Georgia is so pretty, lovely country with great people, delicious food and nature. And about the Olympiad we should say that it was not easy at all for us. To say the truth maybe we will not get medal but this is very good experience for our future plans.

Susanna Kyrakosian from Armenia (Student)

It is not my first time in Georgia. Actually I visited this country for several times as it is our neighboring country. Meanwhile tasks were too difficult for me and I doubt to get a medal. I think this is not priority as this event is supposed to connect people from different countries of the world and make the friendship for future collaboration.

Students working on the theoretical exam





Catalyzer

July 23 - August 1, 2016

ICHO sightseeing tour
in Signaghi

Happy Birthday
to
Evaggelia Parisopoulou
and
Wee Zhuan Goh

Shkmeruli is a chicken dish from the village of Shkmeri, Racha region of Georgia. Chicken in a special spicy sauce with garlic and milk, often cooked on a clay pan.
Its ingredients are: chicken, mashed garlic and milk. If you decide to try Shkmeruli in Shkmeri, this quite exotic village (elevation 1700m) is home to Usholtsa Caves and even more interesting tourist site: river Kheori canyon which locals will be happy to show you. You can, of course, try Shkmeruli in the most restaurants in Tbilisi or other cities.

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nika Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Photocorrespondent: Nikoloz Mdinardze

Sponsors



Media Communication
Support



Yesterday the elections of Steering Committee was over successfully. I-Jy Chang from Thailand was elected as a Chair of Steering Committee of IChO 49th, for future year.



50th anniversary Olympiad will take place simultaneously in two countries, in Czech Republic and in Slovakia in 19-29 July, 2018.

49th International Chemistry Olympiad will be second time hosted by Thailand, once again after the 31th IChO in 1999. The 49th IChO will be organized during July 6-15, 2017, at Salaya Center, the main campus of Mahidol University in Nakhon, Pathom province located about 50 kilometers from Suvarnabhumi Airport.

ICHO 51th will be held in France in 2019.



ICHO 53th will take place in Japan, in 2021.



Elections of Steering Committee Chair

Organizers





Kelli Slunt from USA *(Head Mentor)*

I have enjoyed seeing Old Tbilisi, and the weather has been quite pleasant. On the first night we went to the restaurant and it was so delicious. We tried quite different cuisine and really liked Georgian food. One thing that I didn't get to try and which I want to try is Khinkali, so that is something I want to do before I depart.



Emiel de Kleijn Netherlands
(Head Mentor)

I like Georgia very much. It is so nice country and I think we didn't expect it to be like this. We love the hospitality of Georgian people. In Netherlands the weather is not so nice as the weather in Georgia, because in Netherlands it's always cold, raining and here every day is nice and warm and the sky is blue.



Michael Troels Munck from Denmark
(Head Mentor)

Georgia is very beautiful country with a big mountains, nice weather and sightseeings. I have tasted the local cuisine which is absolutely delicious. I had sightseeing tour in Old Tbilisi as well and after it I suppose to be back to Georgia.



Nguyen Ngoc Ha from Vietnam
(Head Mentor)

This is a very nice country and I want to come back here. I have already talked to my friend, my wife and told them that one day I would take them back here. I think people are very friendly. I have traveled to many countries but your food is special. One of the things that surprised me most is the way this event is organized, you had very short time, only four months, so thank you so much!



Alvaro Lobato Fernandez from Spain
(Mentor)

Georgia is a really nice country. First of all Europe is quite different but old part of Tbilisi is really beautiful. I want to come back with my friends, we were talking about it already. May be Oscar (Head Mentor) also will come back with his family. We tasted Khinkali and Khachapuri and it was really delicious. I also learned how to say numbers in Georgian.



Jan Kotek from Czech Republic
(Head Mentor)

It is not my first time in Georgia. In 1992 I was there as a student, participating in the competition. Then I was here as a tourist and had a sightseeing tour around the country. I am always happy to be here and be back one day. Thanks to all the organizers and involved people for the Olympiad.



Henrik Sonsteby from Norway
(Head Mentor)

Georgia is very pleasant country. We used the chance of mountains, rented bikes for couple of days and went up there in a higher level. That was fantastic. As well as we enjoyed Tbilisi so much. The food and everything is very good.



Andrej Godec from Slovenia
(Head Mentor)

I think this country has a big potential for tourism. In Tbilisi there are still some parts that need renovation but in general city is very nice. You have lots of water and fields and that is very good starting point. I've tasted some Georgian food, for example, Khachapuri which is very tasty.

PEOPLE WHO MADE POSSIBLE IChO 48-th

31st July
29°
1st August
28°

N10



Catalyzer

July 28 - August 1, 2016

Medea Chogovadze

At first, I thought that it would be almost impossible to organize the olympiad in such a short time. But with the help and supporting of each other we actually made it possible! This was an unforgettable experience for me. It seems that the time passes very quickly during these days. I don't want IChO-2016 to be over!

Jane Tagviashvili

In spite of the fact that I was involved in the IChO I still can not believe that such a large-scale Olympiad was held in Georgia. I am very happy and full of emotions. I have gained a huge experience and got new friends. I will never forget these days and will be proud for a long.

Mariam Museridze

IChO was one of the greatest experiences I've ever had. I had chance to meet people from all over the world and participate in many different activities. It is amazing that Georgia had chance to host such an amazing event. I hope everybody enjoyed it as much as I did.

Kakha Didebulidze

International Chemistry Olympiad has a great importance for our country. It should be a great stimulator for the development and promotion of Chemistry. I am extremely proud and happy that we made this event possible in the highest level in the shortest time with our colleagues and enthusiastic students.

Revaz Korashvili - Associate Professor of Agricultural University of Georgia

Prof. Elizbar Elizbarashvili - Co-chair of Organizing Committee of the IChO-48, Association of Professional Chemists of Georgia.

Dr. Natia Ochkhikidze - Secretary, Agricultural University of Georgia



Inga Lomadze - Scientific Committee

Tengo Nozadze

I was more than excited about being a part of the team hosting IChO. I can't describe the level of excitement I felt when all the seats of my lab were taken by students all over the world. IChO for me is the universal triumph, celebration of knowledge and intelligence, and this makes it even better for me. It's the celebration of something I very much love and admire - Chemistry.

Giorgi Pantsulaia - Master of Chemical Sciences; Head Guide

I think that IChO is the great example of the tradition that has a future. I wish all the participants good luck and hope that IChO 48-th will be unforgettable for them. This event will have a great influence to build future professional relations and friendship among the participants.

Tengo Gejadze

I want to thank all the people who worked extremely hard and made IChO 48th. This is a very good possibility to get known people who are very successful and experienced. I was surprised by the atmosphere, which is at the IChO - friendly, cheerful and honest. I found out that there is number one, unwritten law, which stands for the international competition - justice and conscience.

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nika Garuchava, Ana Tsereteli

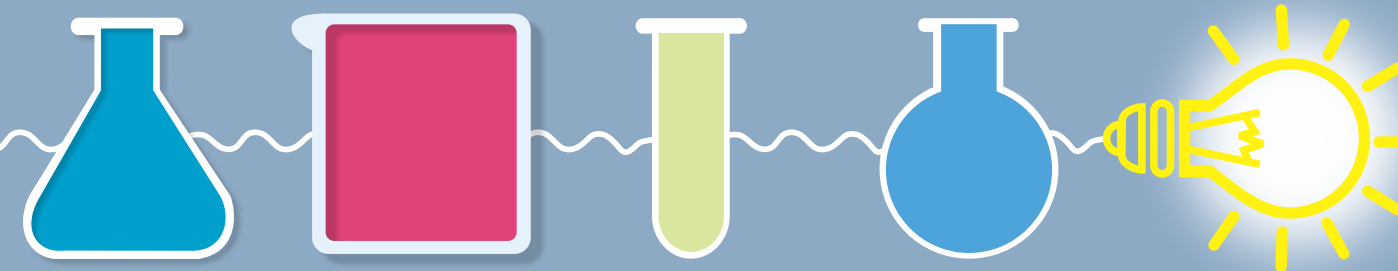
Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Photocorrespondent: Nikoloz Mdinardze

Sponsors



Media Communication Support



PEOPLE WHO MADE POSSIBLE IChO 48-th



Organizers



COME BACK TO GEORGIA



Georgian Bread



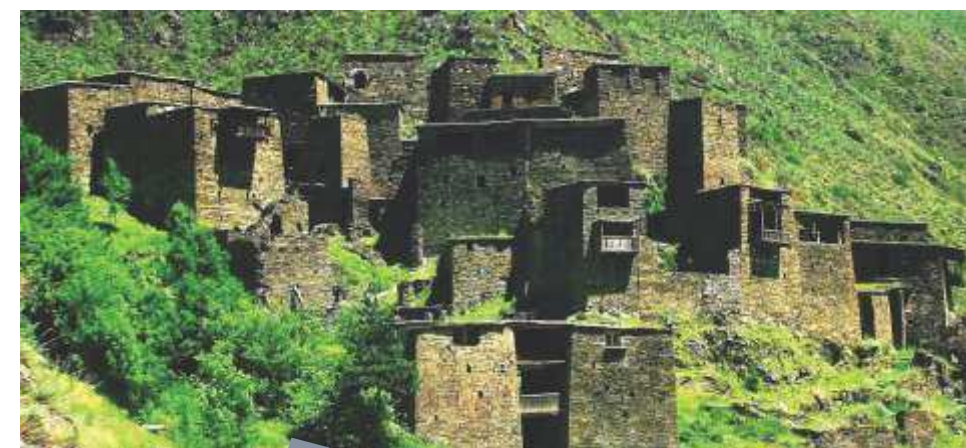
Merab Abramishvili was a Georgian painter whose works were influenced by medieval arts and European neo-impressionism. Due to his unique visual language and aesthetics, Abramishvili emerged as one of the leading Georgian artists, who went beyond the established Soviet-era clichés. In the period of post-Soviet political instability, Abramishvili became preoccupied with mystical imagery. His works were displayed as part of solo and group exhibitions in both Georgia and abroad.

Kazbegi

Shatili



The village of Shatili squats on the northern slope of the Greater Caucasus mountains in Georgia. Even today the area is considered isolated and remote but in centuries past the villagers could not rely on distant authorities to afford them protection. In early medieval times the villagers hit on a solution which was to shield them from their enemies for hundreds of years. They made their village in to a fortress. In the twenty first century the village is usually only accessible between the months of June and the end of September so in more feudal times something had to be done to avert death and disaster. As the village persevered, the architecture evolved. What would normally be small stone dwellings grew taller and developed in to watchtowers. Instead of a wooden roof these watch tower come domiciles became flat-roofed to avoid assault by fiery arrows. The village effectively became a fortress, standing guard over the north-eastern border of Georgia.



Svaneti

Beautiful, wild and mysterious, Svaneti is an ancient land locked in the Caucasus, so remote that it was never tamed by any ruler. Uniquely picturesque villages and snow-covered, 4000m-plus peaks rising above flower-strewn alpine meadows provide a superb backdrop to the many walking trails. Svaneti is divided into Upper (Zemo) and Lower (Kvemo) Svaneti. Green and beautiful Upper Svaneti offers the best walking and climbing as well as the strongest traditions. The walking season lasts from about early June to mid-October, though some routes can be waterlogged early or late in that period. Skiers and Svaneti's tourism businesses have high hopes for the new Tetnuldi ski resort, on the slopes of mountain Tetnuldi about 20km east of Mestia. Ushguli on the other hand provides an old world contrast, since it is protected by its position deep the mountains and is at the end of a bad road only accessible by a vehicle with a four wheel drive.



Gebzhalia is a softened cheese dish from Georgia's Samegrelo region. Traditionally prepared using cottage cheese, it can also be made with matsoni. In this recipe we have used matsoni. Matsoni is a fermented milk product very similar to yogurt. It is smooth and creamy with a mild, slightly tart flavor. Popular in Georgia and throughout the Caucasus region, matsoni is rich in mineral content, protein and calcium and renowned for its health giving properties. Ingredients: 1 kilo of new cheese, 1 kilo of Matsoni, 2-3 hot green peppers, 4 cloves of garlic, 100 grams of fresh mint, and salt.

Kazbegi National Park is located on the northern slopes of the mighty Caucasus range, and its protected area covers a total of over 8,700 hectares. At 5,047 meters above sea level, Kazbegi Mountain (or Mkinvartsveri) is the third highest mountain in Georgia, and is surrounded by myths and religious tradition. The town of Stepantsminda (also called Kazbegi) itself is charming and a wonderful base camp for exploring the region further. Stepantsminda Historic Museum is located in the memorial house of the Georgian writer Alexander Kazbegi (1848-1890). Together with the library and personal belongings of the writer, the museum houses ethnographic artifacts typical of the Khevi region; archaeological exhibits, religious relics, books, and various works from local artists. Gergeti Trinity Church from the XIV century is located in the village of Gergeti, 6 km from the town of Stepantsminda, at a height of 2200 m. The complex includes Holy Trinity Cathedral, constructed in the XIV century, the bell tower built in the XIV century, and clergy houses from the XV century. Dariali Gorge begins at the confluence of the river Chkheri and ends near Upper Lars. The Gorge itself is 11 km long. The confluence of the Kabakhi and Khda rivers is the most narrow and rocky part of the gorge. You will also have an opportunity to see a Georgian Orthodox Church located within the gorge.

Gozinaki is a traditional Georgian confection made of caramelized nuts fried in honey and usually eaten at New Year and Christmas. In this recipe we show how to make Gozinaki with walnuts. Ingredients: 1 kilo of walnuts, 10 heaped tbs of honey and 2 tbs of sugar.

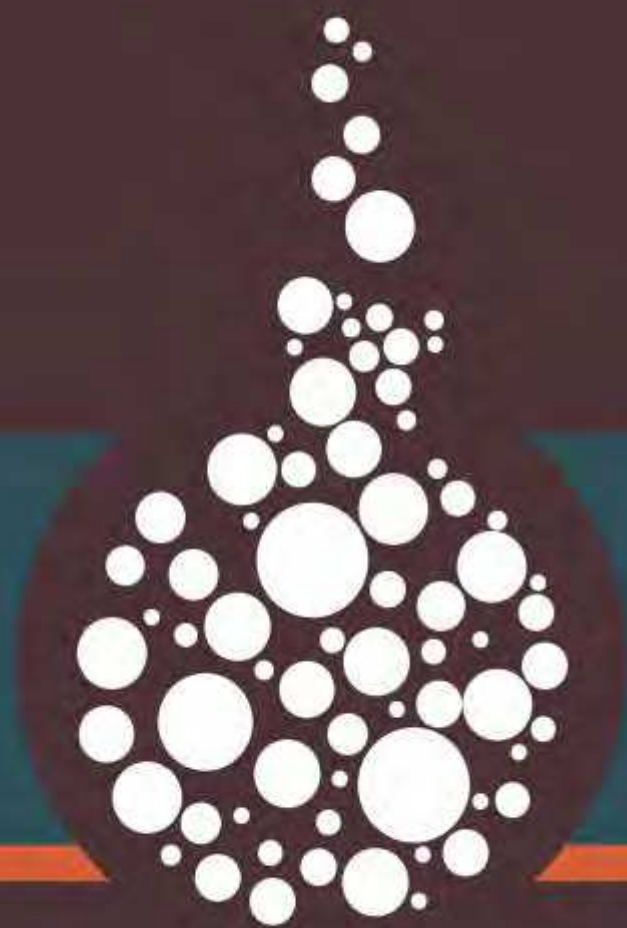


This dish is made from mixing Dambalkhacho and boiled butter. The former is a type of cottage cheese made from curd that is dried using a traditional Pshav method. Cottage cheese is split into portions and is drained of moisture. After that, it is knead by hand and put into jobani – small wicker baskets to dry. Once the cottage cheese dries, it is put into clay pots and covered. It takes about a month and a half for it to develop a special kind of mold that is very beneficial for health when consumed. In order to make Dambalkhacho is grated, melted in warm butter and used as spread.

Georgian National Clothes



See You Soon
in Thailand



ICHO
International Chemistry Olympiad

Chief Editor: Natalia Ingorokva

Editor: Nino Matcharashvili

Designer: Mariam Elizbarashvili

Reporters: Nika Garuchava, Ana Tsereteli

Tamar Garuchava, Guram Nadiradze, Lasha Butliashvili

Photocorrespondent: Nikoloz Mdinaradze

Sponsors



Media Communication
Support



N11



Catalyzer

July 23 - August 1, 2016

ICHO 48-th
International Chemistry Olympiad

Congratulation
to
the winners

Award
results

Organizers



Silver Medal	
Yen-Hsin Hsu	Chinese Taipei
Sayedehzahra Kazemiharikandei	Iran
Uliana Khodaeva	Russia
David Peter Kovacs	Hungary
Heejun Sohn	Korea
Anton Morgunov	Kazakhstan
Azamat Smagulov	Kazakhstan
Trung Nguyen Thanh	Vietnam
Takayoshi Akiyama	Japan
Jiri Etrych	Czech Republic
Siradanai Rimsakorn	Thailand
Mikolaj Swierczynski	Poland
Adam Klukowski	Poland
Kevin Tang	United States
Ritums Cepitis	Latvia
Sharvik Mital	India
Kartik Patekar	India
Tamas Karoly Stenczel	Hungary
Anton Hanopolskyi	Ukraine
Soma Turi	Hungary
Shoyunusov Sarvar	Uzbekistan
Rokas Elijosius	Lithuania
Ron Solan	Israel
Ruslan Mammadov	Azerbaijan
Jakub Obuch	Slovakia
Iman Menbariosgouei	Iran
Aron Ricardo Perez-Lopez	Hungary
Vitor Pires	Brazil
Roman Larkovich	Belarus
Shota Hira	Japan
Denys Bondarenko	Ukraine
Josef Tomecek	Czech Republic
Matteo Castagnola	Italy
Pedro Silva	Brazil
Ladislav Prener	Czech Republic
Joyce Tian	United States
Kaiying Wang	Singapore
Fahmi Naufal Rizki	Indonesia
Apisara Kaweyanun	Thailand
Andrea Cheng	Italy
Uros Presern	Slovenia
Dominika Zajkowska	Poland
Nikita Pajanok	Lithuania
Arnur Makenov	Kazakhstan
Adam Svitok	Slovakia
Alexandra Dima	Romania
Hryhory Sinenka	Belarus
Ilija Srpak	Croatia
Yuki Amabe	Japan
Omar Alshangiti	Saudi Arabia
Simon Lichtinger	Germany
Miraslav Makarevich	Belarus
Alali Abdulaziz	Saudi Arabia
Maulana Imam Septyo Putro	Indonesia
Glen Goh Wee Zhuan	Singapore
Pavle Kravljjanac	Serbia
Jimin Li	Great Britain

Gold Medal	
Andrei Iliescu	Romania
Jingjia Liu	China
Tianzong Zhang	China
Alexander Zhigalin	Russia
Yumin Dai	China
Ivan Shershnev	Russia
Hieu Dinh Quang	Vietnam
Alex Liu	United States
Keiya Sakabe	Japan
Chen-Yu Lu	Chinese Taipei
Robert Cristian Raclea	Romania
Juno Nam	Korea
Kanstantsin Anisovich	Belarus
Bulat Kuramshin	Russia
Zhihan Nan	Singapore
Duy Nguyen Khanh	Vietnam
Seyed Peyman Mirghaderi	Iran
Wong Huai Zhe Matthew	Singapore
Utkarsh Gupta	India
Kuan-Wei Wang	Chinese Taipei
Amirali Karimi	Iran
Veerapatr Yotamornsunthorn	Thailand
Hyung Sub Jin	Korea
Michal Lukasz Gala	Poland
Jui-Chien Hung	Chinese Taipei
Junha Park	Korea
Ruangrawee Kitichotkul	Thailand
Paul Haidu Gereaa	Romania
Valay Agarawal	India
Haifei Wang	China

Honourable Mention

Astrid Coste	France
Nauris Narvaiss	Latvia
Niklas Koskinen	Finland
Sia Chee Ying	Malaysia
Mia Busljeta	Croatia
Tamam Hawa	Syria
Alexandre Mesnil	France
Andrea Rogolino	Italy
Jaakko Saaskilahti	Finland

Gold Medal	30
Silver Medal	57
Bronze Medal	83
Honourable Mention	9

Bronze Medal	
Jovan Stojkovic	Serbia
Gabriel Amgarten	Brazil
Lyuben Borislavov	Bulgaria
Mackenzie Shaw	Australia
Hlib Razumkov	Ukraine
Abraham Nathanael Kasogi	Indonesia
Ayat Tassanov	Kazakhstan
Davi Aragao	Brazil
Sofie Hillgaard Pedersen	Denmark
Ramil Babazade	Azerbaijan
Lin Zi Khang	Malaysia
Farukhzhon Barotov	Tajikistan
Dilshan Wijesena	Australia
Yibin Zhang	New Zealand
Zilu Pan	United States
Evan Hockings	Australia
Charos Omonova	Uzbekistan
Miguel Bribiesca-Argomedeo	Mexico
Katarzyna Zator	Great Britain
Johnny Alexander Jimenez Siegert	Germany
Beraun Gasco	Peru
Bohdan Kozibroda	Ukraine
Edward Liu	New Zealand
Samuel Andrejcak	Slovakia
Stefan Stojanovic	Serbia
Anton Konovalov	Estonia
Inga Grazulyte	Lithuania
Faris Alsalamah	Saudi Arabia
Viktor Skorjanc	Croatia
Oveznepes Orazgeldiyev	Turkmenistan
Ignacio Rivera	Argentina
Nariman Mirishov	Azerbaijan
Carel Kuusk	Estonia
Saba Tavdgiridze	Georgia
Lucas In Gyu Lee	New Zealand
Rina Sevostianov	Israel
Jakhongir Fakhriev	Uzbekistan
Boris Borisov	Bulgaria
Vid Kermelj	Slovenia
Andrej Kukuruzar	Serbia
Muhammed Khan	Great Britain
Filip Cermak	Slovakia
Hanna Maria Saik	Estonia
Abdyrahman Merdanov	Turkmenistan
Yanislav Danchevski	Bulgaria
Leo Gitin	Germany
Edward Erelt	Estonia
Carlos Isaac Quezada-Espinoza	Mexico
Huseyn Babayev	Azerbaijan
Paul Rathke	Germany
Simon Yang	Australia
Intizar Tashov	Turkmenistan

Alamry Yazid	Saudi Arabia
Mihail Cicnaev	Moldova
Zain Nofal	Syria
Tammam Mustafa	Syria
Dumitru Mitcov	Moldova
Dominic Egger	Switzerland
Batkhishig Khasbaatar	Mongolia
Chiril Solovei	Moldova
Tuomas Laalo	Finland
Lucas Esteban Della Sala Markovic	Argentina
Dooronbek Mametov	Kyrgyzstan
Paicu Stefan-Nicolae	Italy
Gediminas Jurgis Pazera	Lithuania
Caparachin Vilca	Peru
Jasson Guillermo Rodriguez Mendez	Costa Rica
Regina Rachel Gunawan	Indonesia
Spartak Saghyan	Armenia
Pavel Zelenka	Czech Republic
Tristan Kovacic	Slovenia
Agustin Lopez	Uruguay
Muhammad Ismail	Pakistan
Marijn Jonker	Netherlands
Gaetan Archer	France
Melanie Zorron	Uruguay
Glebs Jersovs	Latvia
Zvonimir Mlinaric	Croatia
Azizbek Akhmedov	Tajikistan
Abdullah Kattineh	Syria
Krastyo Draginov	Bulgaria
Martin Rihtarsic	Slovenia
Victor Osvaldo Hernandez-Lima	Mexico