



CATALYZER

Journal of the 35th International Chemistry Olympiad

Issue No. 1

July 2002

Greeting message from the Chairperson of the National Organising Committee of the 35th IChO

On behalf of the Organising Committee, it is my pleasure to send my warm greetings to the participants, mentors, observers and guests from all countries to the 35th International Chemistry Olympiad, which will be held in Greece for the first time in July 2003. The IChO will be under the auspices of the Greek Ministry of Education and the Association of Greek Chemists. The Chemistry Department of the National and Kapodistrian University will host the competition. We hope it will be entertaining and enjoyable, but mainly we hope to foster the forging of friendships among the competitors. We are planning many social and cultural events and wish all the participants a very good time in Greece.

Dr. Andreas Tsatsas

Greece, the Land of Gods and Goddesses

It is hard to imagine what civilized life would be like today without the influence of ancient Greece. It also is hard to imagine what the world would be like without the geometry of Euclides or Pythagoras, the logic of Aristoteles, the unique architectural style that has influenced architects all over the world, or even the fables of Aesopos known to children around the globe. Let us not forget also the Olympic Games, with their spirit of world-peace and brotherhood, first conceived and organized by the Greeks; or the Greek language which has enriched other languages with so many words and concepts, like philanthropy, harmony, music, sophistication, architecture, ecology and thousands of others.



Variety is, in fact, the hallmark of the geographical landscape of Greece. On the other hand, there are high mountains and entire mountain ranges such as the Pindus range (also known as Greece's backbone) or Mount Olympos (with its summit the Pantheon, the highest peak in Greece at an altitude of 2,917 metres) and the mountains of Macedonia and Thrace intersected here and there by a few valleys through which relatively small rivers flow. On the other hand, the endless lacework of the coastline produces a series of scenic surprises. It is these heavily indented shores that give Greece such rare beauty, quite unique in the Mediterranean.

Greece offers travellers a unique blend of most beautiful Mediterranean landscape, overwhelming history and culture and a people of great hospitality.

Athens, the symbol of freedom, art and democracy

Athens, the capital of Greece since September 18, 1834, is the oldest inhabited city in the world. The archaeological findings reveal almost 70 centuries of history. According to mythology god Poseidon and goddess Athena (the goddess of wisdom and knowledge) competed, as to who would become protector of the young and rising city. Finally, goddess Athena won, offered a branch of the olive tree as a gift and the city was named after her. In the city of Athens were for the first time the basic principles of life revealed: respect to the human being, isonomy and freedom. These principles, not as ideas, but as a way of living, led to democracy (5th century B.C.), the first in history. The situation described above provided the ideal environment for art, drama and philosophy to develop, so Athens became the centre of civilisation of the ancient world. It gave birth to some of the greatest artists (Phidias, Praxitelis), writers (Sophocles) and philosophers (Socrates, Plato), whose work is an invaluable heredity for all the generations: buildings, the most famous being the architectural wonder of Parthenon, the temple dedicated to goddess Athena, and sculptures, theatrical plays, speeches and teachings, which have not been overcome by the years, as far as their style and morals are concerned.



Although Athens is most known for its ancient history, the later one is also rich and interesting. It is influenced by the spreading of Christianity, since one of the first and most hearty

Christian communities was formed in our city. There are a lot of Byzantine (Kapnikarea, Ag. Theodoroi) and posterior churches (the Cathedral of the Greek Orthodox Church) that indicate a close relation to Christianity. After the liberation from the Ottoman suzerainty and as the capital of the newly established Greek state, Athens started growing again in population, area and culture. New buildings gave a different look to the city. Some of them are the House of Parliament, the National Library, the University and the Academy of Athens.

Nowadays Athens is a modern and alive city, which offers the foreign visitor unlimited possibilities for sightseeing and nightlife. In the Commercial Centre, Plaka or the Sunday Flea Market of Monastiraki one can take an enjoyable walk, or go shopping. Another wonderful place, sitting right in the centre of the city, is Lycabettus hill, a quite high hill that provides a panoramic view of the city, which is especially attractive in the night. As far as entertainment is concerned, one can choose among a great variety what interests one more. The highlights of summertime are the open theatres, where performances of ancient tragedies and comedies or concerts are given, and the open cinemas.

It is up to the visitors to choose how they spend their time in Athens. We can assure them that they will in no case be bored and that time is never enough for a city like this one!

National and Kapodistrian University of Athens

National and Kapodistrian University of Athens was founded on 3 May 1837 and was housed in the residence of architect Stamatis Kleanthes, on the north east side of the Acropolis. It was the first University, not only in the newly established Greek state, but also in all the Balkans and the Eastern Mediterranean in general.



The "Othonian University", as it was called before taking its present name, consisted of four Faculties: Theology, Law, Medicine and Arts (which included applied sciences and mathematics). It had 33 professors, 52 students and 75 non-matriculated "auditors". New classes began in a new building, which was designed by the

Danish architect Christian Hansen, in 1841.

A major change in the structure of the University came about in 1904, when the Faculty of Arts was split into two separate Faculties: that of Arts and that of Sciences, the latter consisting of the departments of Physics and Mathematics and the School of Pharmacy. In 1919, the department

of Chemistry was added, and in 1922 the School of Pharmacy was renamed a Department. A further change came about when the School of Dentistry was added to the Faculty of Medicine.

In this first and "heroic" period for Greek education, the University faculty made great efforts to fill the gap between the newly founded institution and older ones in other countries.

Between 1895 and 1911, an average of one thousand new students entered the Faculties each year, a figure which rose to two thousand at the end of World War I. This led to the decision to introduce entrance examinations for all the Faculties, beginning in the academic year 1927-28. Since 1954 the number of students admitted each year has been fixed by the Ministry of Education, on the proposal of the Faculties.

In the 1960's construction work began on the University Campus in the suburb of Ilissia. The Ilissia campus now houses the Schools of Philosophy, Theology and Sciences.

Contact for Information

Dr. Andreas Tsatsas

National and Kapodistrian University of Athens

Department of Chemistry, Inorganic Chemistry Laboratory

Panepistimiopolis 157 71 Athens

Hellas

Tel. : +3-010-7274339

+3-010-7274348

Fax : +3-010-7274782

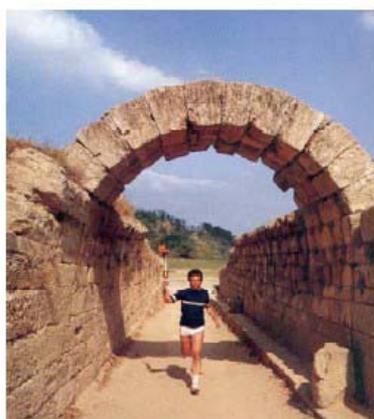
e-mail : tsatsas@chem.uoa.gr

Editorial Team

Patrina Paraskevopoulou and Christodoulos Makedonas

National and Kapodistrian University of Athens

Department of Chemistry, Inorganic Chemistry Laboratory





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6 July 2003

Athens – Hellas

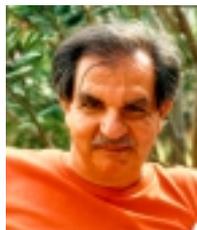
Issue No. 2

Editorial

This year, the International Chemistry Olympiad is being held in our city, Athens, the cradle of civilization. It had been in this setting that Demokritos and Leukipos tested their chemical hypotheses and where the concept of the atom was first debated. These concepts were developed alongside with the ideals of the Olympic Spirit and the Olympic Truce. This is the same setting, in which, two and a half thousand years after their introduction, these ideals will come together once again, under the shrine of the Acropolis.

We, the editorial team of “Catalyzer”, would like to wish to all of you a pleasant stay in our city and would like also to extend our wishes to the student participants for every success in this competition, as well as in any other future competition in their lives.

The Catalyzer team



President of the 35th IChO
Assoc. Prof. Andreas Tsatsas
Department of Chemistry
NKUA



**General Co-ordinator
of the 35th IChO**
Ass. Prof. Spyros Koinis
Department of Chemistry
NKUA



**Chairman of the Scientific
Committee of the 35th IChO**
Prof. Aristides Mavridis
Department of Chemistry
NKUA

Greetings from Minister of Education and Religious Affairs



It is my very great pleasure to welcome the 35th International Chemistry Olympiad, the largest and most prestigious international competition that our country has the honor to host in 2003.

This Competition is a rare opportunity to honor talented students in the Physical Sciences and to stress the contribution of Chemistry in the solving of important contemporary problems in the sectors of

health, the Environment and Energy as well as the expansion of scientific knowledge. It is a competition that seeks to establish friendship and understanding among the youngsters from many different countries and the exchanging of ideas among the students and their international scientific communities.

I warmly congratulate all those involved in the organization of this venture and the competing students. May their love and interest in Chemistry act as a springboard for significant discoveries and accomplishments in the future.

Petros Efthymiou

Greetings from the Rector of the National and Kapodistrian University of Athens



The Olympic Games originated in this country, Hellas. It is, therefore, of great importance that a contest of knowledge in the vital science of Chemistry is

to be organized for the first time in Greece. It is to be held in a country where intellectual competition flourished parallel to and together with athletic competition and the harmony of the mind and the beauty of the body became combined in the ideal of the “καλού καθαού”. It is to be noted that the etymology of the word **Chemistry** (fr. Chimie, eng. Chemistry, ger. Chemie) passes through the Greek language, which either from “χημεία” (from the egyptian kmt, meaning “black” or “fertile”) or “χυμεία” (from the Greek, χυμός, juice, to mix fluids) became the source for the European words which refer to this Science.

The University of Athens, with its strong Department of Chemistry, that honors our university, is co-organizer of the 35th International Chemistry Olympiad. It is our hope that, through this intellectual competition for students, the ranks of future Chemists will grow significantly and that Public Opinion will be suitably sensitized regarding the pivotal role of Chemistry in the life of contemporary man.

Georgios Bampiniotis

Greetings from the Chairman of the Department of Chemistry N.K.U.A.



It is with great pleasure and enthusiasm that our department has accepted the proposal of the Association of Greek Chemists to co-organize the 35th

International Chemistry Olympiad (IChO) by acting as the host Institution and preparing the scientific part of the competition.

During the past year we have redirected our time and efforts to make this venture a great success for all those involved especially the participating students.

We consider that the successful organization of the IChO is not only a significant event for our Country, but also a rare opportunity to exhibit the wonders of Chemistry to our youth.

The IChO occupies a special place among the International Science Olympiads because Chemistry is the Central Science that supplies basic knowledge to many of the other Sciences.

It is my heartfelt wish that this Olympiad would act as a strong incentive for the youth of this planet to be attracted by and to serve the Science of Chemistry. Progress in Chemistry entails progress in the other Sciences, all for the betterment of humanity.

Nikos Hadjichristidis

Greetings from the President of the Association of Greek Chemists



The International Chemistry Olympiad (IChO) is an educational competition that initiates students in secondary education to the ways of scientific knowledge, mutual respect, friendship and noble competition.

The Association of Greek Chemists and the Department of Chemistry of the University of Athens are co-organizing the 35th IChO in Athens from the 5th to the 14th July 2003. The event is under the aegis of the Ministry of Education.

It is a great honor for Greek Chemists and especially for our colleagues who are teachers in the Secondary Education system and those in Universities and Institutes of higher education, that this important international Chemistry competition is to take place in the beautiful setting of Attica.

Michael Kazanis

In a single verse the poetic definition of Chemistry

*Κορώνα των Επιστημών, θαυματουργή Χημεία,
που μέσα από τα σκύβαλα στολίδια βγάζεις και πετράδια,
μπορείς τα τίμια να τα πλάσεις από την ατιμία,
να βρεις ερωτικούς παλμούς και στην καρδιά την άδεια;*

Κωστής Παλαμάς

Crown of all sciences, wonders-working Chemistry,
with your ability to extract gems and jewels from chaff,
can you mould infamy into honesty,
can you find erotic thrills even in the empty heart?

Kostis Palamas

K. Palamas (1859–1943) Legendary Greek poet. He studied at the University of Athens of which he later was secretary for many years. Except in his early work, he wrote in demotic or vernacular Greek and translated into this idiom the New Testament and the works of various European writers. His own verse is considered more intellectual than lyric, although his lament *Taphos* (1898) is an exception. A versatile writer, he produced epics, lyrics, plays, short stories, and criticism. Many of his 30 volumes have been translated into English, among them a lyric drama *Trisevyene* (1903, tr. *Royal Blossom*, 1923) and a volume of poetry, *Life Unshakeable* (1904, partial tr. 1919, 1921).

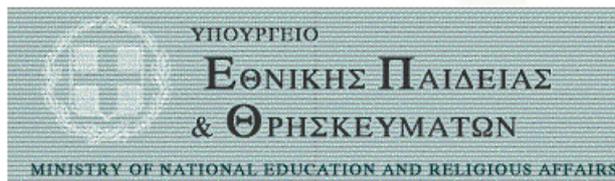
Program of the day

7:30-9:30	Breakfast at Hotel
10:00	Departure for Opening Ceremony
11:00-13:00	Opening Ceremony
13:00-15:00	Buffet
15:00-16:00	Transportation to SC
20:00	Dinner at SC

Program of the Opening Ceremony

10:15-10:45	Arrival of guests
11:00	Piano music
11:10	Welcome by Dr. A. T. Tsatsas President of the 35th IChO
11:15	Singing Program by soprano Nantia Diamantidou
11:25	Presentation of the participating delegations
12:00	Official Opening of the 35th International Chemistry Olympiad
12:10	Hellenic songs performed by the chorus of NTUA <i>Chorus master: Vassilis Makridis</i>





NATIONAL AND KAPODISTRIAN
UNIVERSITY OF ATHENS



ASSOCIATION OF GREEK CHEMISTS



GENERAL CHEMICAL
STATE LABORATORY



A.G.C.
Paints-Inks-
Varnishes
Division



Municipality of
Loutraki-Perahora



Ministry of Culture



Company of
Thermal Buses



Attiko Metro



EPOM
Groupe Pernod Ricard



Music Department
of NTUA

Contact for Information

Assoc. Prof. A. Tsatsas
National and Kapodistrian University of Athens
Department of Chemistry, Inorganic Chemistry Laboratory
Panepistimiopolis 15771 Athens, Hellas

Tel.: +30-210-7274339

Fax: +30-210-7274782

e-mail: 35icho@uoa.gr

Editorial Team

Dr Anthony Bobetsis

Councilor of Chemistry, Pedagogical Institute

Patrina Paraskevopoulou, Christodoulos Makedonas and Constantinos Menidiatis
Inorganic Chemistry Laboratory, Department of Chemistry, NKUA



CATALYZER

Journal of the 35th International Chemistry Olympiad

7 July 2003

Athens – Hellas

Issue No. 3

Editorial

So, the Games are on foot! We have already covered the first two days of the 35th IChO.

On Saturday, we had the opportunity to welcome our friends from all over the world. Our company is pretty large: 232 students, 176 mentors, scientific observers and guests from 62 countries have come to Athens in order to participate in the 35th IChO.

On Sunday the opening ceremony took place in a warm and friendly atmosphere. We really enjoyed the music performed by the chorus of the National Technical University of Athens and a Greek soprano.

Today the students visit Ancient Corinth, while the mentors have a very busy day trying to translate the Practical Exam...

*AIEN APISTEYEIN
KAI YTIEIPOXON
EMMENAI AΛΛΩN*

Homer *Iliad*, 6, 208

**Ever to be the bravest
and pre-eminent above all**

This advice was given by Ippolachos from Lycia to his son Glaucus.

JAPAN AND PORTUGAL JOIN THE CLUB!

Two new countries participate for the first time in the IChO: Japan entered the Olympiad with 4 students, 2 mentors and 2 guests, and Portugal with 4 students and 2 mentors. We welcome you all!



The Japanese Team: Masatoshi Akahane, Kouichi Ueno, Naoto Satou and Ichirou Tanabe (students), Masato Ito, Yukihiro Ueno, Yoshikazu Takamatsu, Tadashi Ikegami.



The Portuguese students: Andre Ramos, Ana Vieira, Carlos Oliveira, Concalo Felix.

GLAD TO HAVE YOU HERE!

It's Saturday afternoon and most of the groups have arrived in Athens. "Catalyzer" was present at the airport together with the Guides in order to meet the participants.

The Austrian delegation seemed very happy being here. Kerschbaumer Manfred, the head mentor, ensured us that his team is very well prepared and they hope for a very good result. Patrick, a 15 year old boy, seems to be the star of the team (silver medal last year in Groningen). Mr Manfred was confident for the success of this Olympiad and wished that the students will make new friends in a fair competition.



Austria (Franziska Bell, Patrick Ludl, Clemens Mayer, Armin Thrlhammer)

We were also very happy to meet the Egyptian team. Egypt takes part in the IChO for the second year and its members seemed to be pretty excited about it. Moreover, Head Mentor Prof. Dr Saad Hassan emphasised on the importance of interacting with other groups, gaining experience, making new friendships and getting to know other cultures.



Egypt (Maryam M. M. Ismail, Ahmed M. A. Mohamed, Michael S. M. Deryas, Ahmed M. R. A. Zaghw)



Uruguay (Luciana Prini, Claudina Rattaro, Enrique Neumann)

Furthermore, he talked about the very long-lasting friendship between our nations and wished success for the event and a good position for his team.

Although the teams from Argentina and Uruguay had a very long journey, were enthusiastic and made a lot of fun. They noticed that the weather is too hot (in the southern hemisphere it is Winter now), and declared being ready for a medal.



Argentina (Pablo Aberbuj, Matias David Galetti, Carlos Manuel Alberto Guardia, Eduardo Jose Rosaz)

Mr Anton Sirota (Slovakia team), a member of the Steering Committee and an old friend, underlined his absolute certainty for the organisational success of the competition in both the scientific and social level, since Assoc. Prof. Andreas Tsatsas is the President of the Olympiad.

Finally, among others, we welcomed the Cypriot team. Head mentor Michael Nikolaou expressed his wish for a bronze medal and his belief that this competition is a great chance for all the students to make good friends.

GETTING TO KNOW EACH OTHER BETTER!



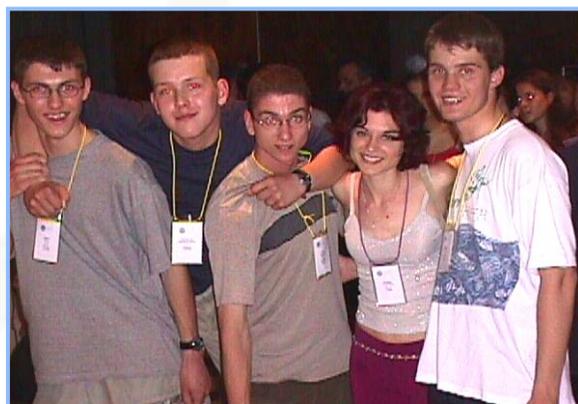
The Australian team: George Zhong, Olie Thorn-Seshold, Jason Chung, Tarrant Falcke

The Australian team really stole the show at yesterday evening's dinner at "President" hotel. Olie and his friends wearing those funny hats teased almost everybody in the lobby, emphasizing that they were all happy being here. Olie expressed that he is "absolutely thrilled to be here. It's gonna be a great competition. Three hundred kids around the world, all looking for fun and a bit of Chemistry, as well. It's gonna be a great time. I love it!" (!)

From the Bulgarian team, Hristo and Delyan stated that they are very happy being here among the best chemistry students from all over the world, they studied hard and they are ready for a medal.

Jonas, from the Norwegian team, shared with us his expectations for a medal, although he has not studied very hard. Also, he is looking forward to meeting new friends. The social part of the competition was also emphasized by Berglind and Helga from Iceland. Moreover, they are determined to do their best at the competition.

Finally, Raimondas, from the Lithuanian team, declared that they are all well prepared and ready for a medal.



The Latvian team: Aleksandrs Prokofjevs, Kaspars Veldre, Reinis Danne, Edgars Jecs



The Hellenic team: Alexandros Dimitriadis, Nikos Liakakos, Yiannis Kordonis, Konstantinos-Antonios Goulas

A little bit fun...

Two hydrogen atoms bumped into each other recently.
One said: "Why do you look so sad?"
The other responded: "I lost an electron."
Concerned, One asked "Are you sure?"
The other replied "I'm positive."

A neutron walks into a bar, sits down and asks for a drink. Finishing, the neutron asks "How much?"
The bartender says, "For you, no charge."

Q. If a bear in Yosemite, and one in Alaska fall into water, which one would dissolve faster?

A. The bear in Alaska because it's polar.



Program of the day

Students

7:30-9:30 Breakfast at SC
9:30-14:00 Excursion to Ancient Corinth
14:00-15:00 Lunch at SC
15:00-20:00 Rest & Study at SC
20:00 Dinner at SC

Mentors

8:00-9:00 Breakfast at Hotel
9:30-13:00 Translation of Practical Exam at UOA, Chemistry Dpt
13:00-14:00 Buffet Lunch
14:00-19:00 Translation Completed and Copied
20:00 Dinner at Hotel

Contact for Information

Assoc. Prof. A. Tsatsas
National and Kapodistrian University of Athens
Department of Chemistry, Inorganic Chemistry Laboratory
Panepistimiopolis 15771 Athens, Hellas

Tel.: +30-210-7274339
Fax: +30-210-7274782
e-mail: 35icho@uoa.gr

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Inorganic Chemistry Laboratory, Department of Chemistry, NKUA



CATALYZER

Journal of the 35th International Chemistry Olympiad

8 July 2003

Athens – Hellas

Issue No. 4

Editorial

The first tough day for the students has come! This morning the Practical Examination is taking place. The mentors are getting some rest and entertainment visiting Mycenae and Nafplion after the difficult job of translating the Practical Tasks during Sunday night and Monday.

Some details and photos concerning the Opening Ceremony are included in today's newsletter. Also it is presented an insight on the 1st Jury Meeting and interesting information about Ancient Corinth that students visited yesterday. We hope that they really enjoyed it!

It is rather interesting to notice the convergence of opinions concerning the good choice of the tasks.

CULTURE AND ENTERTAINMENT COME TOGETHER!



The Doric temple of Apollo (550 B.C.)

Today morning all the students had the chance to visit the ancient site of Corinth. The town was first inhabited in the Neolithic period (5000-3000 B.C.). The peak period of the town, though, started in the 8th century B.C. and lasted until its destruction by the Roman general Mummius in 146 B.C. Representative of its wealth is the Doric temple of Apollo which was built in 550 B.C. The city was reinhabited in 44 B.C. and gradually developed again. In 51/52 A.D., Apostle Paul visited Corinth. The centre of the Roman city was organized to the south of the temple of Apollo and included shops, small shrines, foundains, baths and other public buildings. The invasion of the Herulians in 267 A.D., initiated the decline of the city though it remained inhabited for many centuries through successive invasions and destructions, until it was liberated from the Turks in 1822.

**ΑΜΕΣ ΔΕ Γ' ΕΣΟΜΕΘΑ
ΠΟΛΛΩ ΚΑΡΡΟΝΕΣ**

Plutarch, Laconic apothegms

“We will be much better than you”

Young Spartans talk to older Spartans and exhibit their will to do their best in every part of their life.

The Official Opening Ceremony took place yesterday morning at Aula Amphitheater, School of Philosophy, NKUA. Guests arrived around 10:30 in a happy atmosphere. Prof. Andreas Tsatsas, President of the 35th IChO, opened the ceremony with a very warm speech. The presentation of the participating delegations was the most enthusiastic part of the ceremony. Following, Mr Petros Efthymiou, the Minister of National Education and Religious Affairs, declared the Official Opening of the 35th IChO. The Minister warmly congratulated all those involved in the organisation of this venture and especially the competing students. After the ceremony the Minister had a really interesting discussion with the students and wished them good luck.

Mr Apostolos Kaklamanis, Chairman of the Greek Parliament, sent in written his congratulations to all those who participate in this international competition, which brings out the knowledge, the spirit, the talent and the inventiveness in the science of Chemistry. He also wished every success in this effort.

The Ceremony was enriched by a music program performed by the Chorus of NTUA and the Greek soprano Nantia Diamantidou. The event came to an end with the national anthem of Hellas.



The Korean team: Yong Jin Kim, Byung Ok Na, Ji Ho Lee, Seung Pil Jang



CATALYZER

Journal of the 35th International Chemistry Olympiad

9 July 2003

Athens – Hellas

Issue No. 5

PRACTICAL EXAMS ARE OVER ONE MORE TEST TO GO!

Editorial

The Practical Examination is over. Most of the students characterised the tasks as pretty good, with the organic part being demanding due to the multiplicity of the procedure, whereas the analytical part was quite easy. We hope that all of the students will have some rest in Loutraki and will prepare themselves for the second round.

By the time those lines were written, the 2nd Jury Meeting was in progress. We trust that all decisions will be taken in favour of the students.

On the current newsletter you will read the students' comments on the laboratory examination, an article on how the Olympic Games were born and have a little bit fun trying to solve today's chemical reaction crossword.



Little Chemists in action...

ΕΙ ΜΗ ΤΑΣ ΟΥΣΙΑΣ ΚΑΤΑΜΑΘΗΣ ΚΑΙ ΤΑΣ ΟΥΣΙΑΣ ΚΕΡΑΣΗΣ
ΚΑΙ ΤΑ ΕΙΔΗ ΝΟΗΣΗΣ ΚΑΙ ΤΑ ΓΕΝΗ ΣΥΝΑΨΗΣ ΤΟΙΣ ΓΕΝΕΣΙΝ,
ΕΙΣ ΜΑΤΗΝ ΤΩΙ ΚΟΠΩΙ ΕΠΕΧΕΙΡΗΣΑΣ, Ω ΒΑΣΙΛΕΥ

Democritus of Abdera, Omnibus Book

If you don't know well about the substances, if you don't mix the substances and understand the species, if you don't bind genus with genus, your effort is hopeless, King

“Easy tasks for the talented pupils”

That’s what most of the students stated to us outside the laboratories, where the examination was held. Yousef Alnajar from Kuwait was the first student that came out declaring that the organic part was difficult, whereas the analytical part was OK, but most of his colleagues who followed him seem to disagree. In the following section we present some comments expressed to us.



“It was interesting, but not difficult. The laboratory was well organised, we had plenty of space, whereas Professors were pleasant and eager to help.”

Francis Tejedor (France)

“There were a lot of steps, quite complicated, but if you followed them the results were not hard to take.”

Gabriel Cheong (Singapore)



“It was fairly easy and it went very well. The organic part was a bit difficult, but the analytical part was very easy. The laboratory was well organised.”

Tapio Salminen (Finland)

“It was fine. I manage to finish the task, while I didn’t finished last year.”

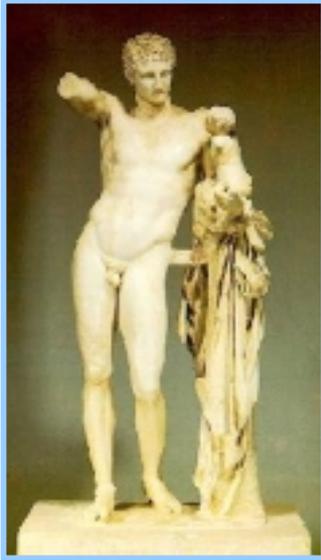
Helga Sghvatsson (Iceland)

“It wasn’t hard and the organic part was interesting.”

Jevgenia Tamjar (Estonia)



OLYMPIC GAMES: 2800 YEARS OF HISTORY



Hermes of Praxiteles

The origin of the Olympic Games is linked with many myths referred to in ancient sources, but in the historic years their founder is said to be Oxylos whose descendant Ifitos later rejuvenated the games.

According to tradition, the Olympic Games began in 776 B.C. when Ifitos made a treaty with Lycourgos the king and famous

legislator of Sparta and Cleisthenes the king of Pissa. The text of the treaty was written on a disc and kept in the Heraion.

In this treaty that was the decisive event for the developement of the sanctuary as a Panhellenic centre, the "sacred truce" was agreed. That is to say the ceasing of fighting in all of the Greek world for as long as the Olympic Games were on.

As a reward for the victors, the cotinus, which was a wreath made from a branch of wild olive tree that was growing next to the opisthodomus of the temple of Zeus in the sacred Altis, was established after

an order of the Delphic oracle. The Olympics were held, after the completion of four years during the month of July or August. The time in between two Olympic Games was called an Olympiad. In the beginning the games lasted



Receiving and blessing of the Olympic flame just before the Olympic Torch Relay

only one day and comprised of only one event, the running of one Stadion, but gradually more events were added resulting, towards the 5th century B.C., in the games lasting for 5 days. In total the Olympic Games consisted of 10 events: running, the pentathlon, jumping, discus, "ekebolon" javelin, wrestling, boxing, the pancration, chariot racing, and horse racing. All Greeks who were free citizens and had not committed murder or heresy, had the right to take part in the Olympic Games. Women were not entitled to take part, except as owners in the horse races, while being strictly prohibited from watching the games.

The athletes presented themselves one month before the games began at Elis, the organising town, but the organisation and supervision for the upholding of the rules was carried out by the Hellanodikes, who were chosen by lot from the citizens of Elis.

Two days after the beginning of the games, the procession of the athletes and the judges started



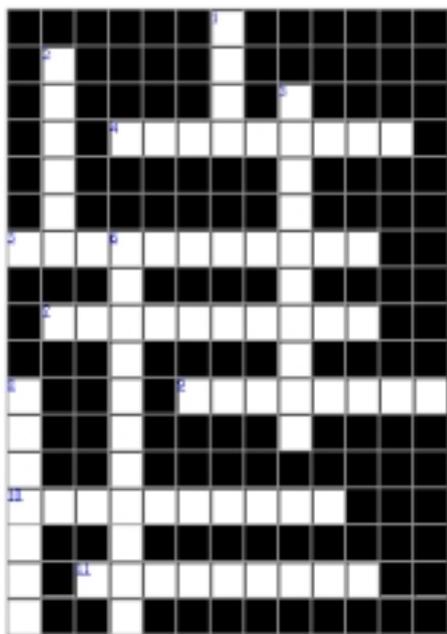
Palestra, the area where the sport of wrestling was taking place

from Elis to arrive in Olympia where it was received by the crowds who had come to watch the games.

The ceremonies began with the official oath that was taken by the athletes at the altar of Horkios Zeus, in the Bouleuterion, swearing that they would compete with honour and respect the rules.

The victors enjoyed great honours and on returning to their cities their compatriots pulled down part of the walls for them to enter. They were also given special privileges and high office.

Chemical Reactions Crossword



Across:

4. Chemicals mixed together before a reaction
5. A solid formed when 2 solutions are added
7. Burning
9. Atoms chemically combined together
10. Energy released from a chemical reaction
11. The breaking down of metals in chemical reactions, either slowly or quickly

Down:

1. Zn
2. Cu
3. Iron coated with zinc
6. Type of reaction where 2 chemicals combine to form one product
8. Water based solutions



Program of the day

Students

All day at Sport Camp

Mentors

7:30-8:30	Breakfast at Hotel
9:00-13:00	2 nd Jury Meeting continues at UOA, Chemistry Dpt Translation of Theoretical Exam
13:00-14:00	Buffet Lunch
14:00-19:00	Translation Completed and Copied
20:00	Dinner at Hotel

Contact for Information

Assoc. Prof. A. Tsatsas
National and Kapodistrian University of Athens
Department of Chemistry, Inorganic Chemistry Laboratory
Panepistimiopolis 15771 Athens, Hellas

Tel.: +30-210-7274339

Fax: +30-210-7274782

e-mail: 35icho@uoa.gr

Editorial Team

Dr Anthony Bobetsis

Councilor of Chemistry, Pedagogical Institute

Patrina Paraskevopoulou, Christodoulos Makedonas and Constantinos Menidiatis
Inorganic Chemistry Laboratory, Department of Chemistry, NKUA



CATALYZER

Journal of the 35th International Chemistry Olympiad

10 July 2003

Athens – Hellas

Issue No. 6

Editorial

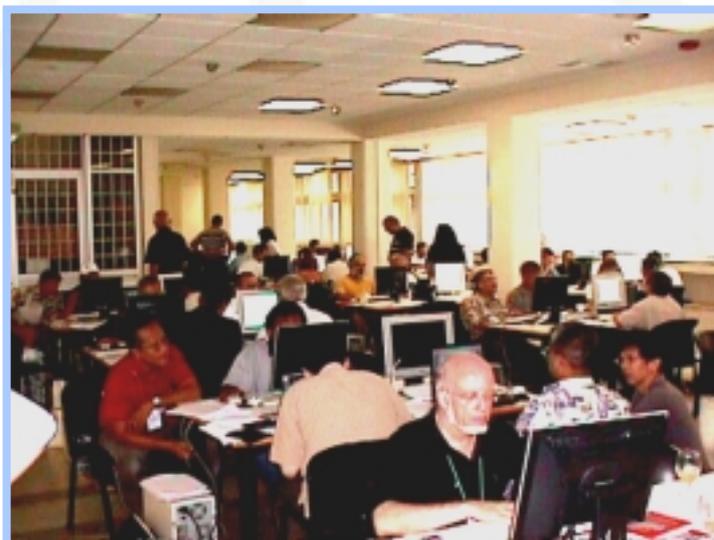
The day of the final battle has come. Students are expected to find the theoretical tasks difficult, at least at first sight. In any case, we wish them good luck! The mentors will enjoy a one day cruise to Saronic Bay, something they deserve, after a demanding translation procedure, following a hectic 2nd Jury Meeting.

The assessment of the Practical Exam is in progress and we present exclusive photos.

You will also have the chance to read an interesting article about the origin of the Nb and Ta names.

A reading guide for the Greek language is presented.

WAITING FOR THE BIG DAY...



Tuesday's jury meeting bowed along without any major disputes. However, small corrections and changes kept mentors in alert until Wednesday's noon. The tasks have been characterized as pretty good with the main difficulty being the physical chemistry part, whereas they seem to be too many.

Professor Constantinos Efstathiou, representing the Scientific Committee, declared that the exam contained questions of gradual difficulty and ensured that a fair judgement will follow. He also made the prediction that it will be a good distribution of marks, but without any 125/125.

Within the framework of the exam translation we had the opportunity to talk with Angela Koch, who is the scientific observer for the German team. Next IChO is going to be held in Kiel and we asked for her opinion on our organization. She replied that it was very impressive and very interesting to the German delegation to see all the complexity of the whole organization. Moreover, they spotted some defects, which gave them good ideas, but not major problems. As a conclusion she gave us a grade of 8 out of 10!

**ΓΗΡΑΣΚΩ Δ' ΑΕΙ ΠΟΛΛΑ
ΔΙΔΑΣΚΟΜΕΝΟΣ**

**“Getting older,
I learn more and more”**

This proverb belongs to the Athenian nomothete Solon, one of the seven wise men of Hellas.

COMMENTS ON THE THEORETICAL EXAMINATION

We are having a great time here and Greeks have been greatly hospitable. We are looking forward for the rest of the competition. It's a challenging exam for everyone, but we think that our students will do their best and we will be pleased from their performance. Our curriculum is probably less heavy on the organic and more heavy on the theoretical chemistry. So, we are comfortable with the exam. We congratulate the Greeks for putting together a good test for the students.

Todd Trout (United States)

It seems that the tasks are rather complex and complex problems are good for our students. On the other hand, it seems to me that the number of the problems is rather large, but strong students would not face any difficulties with that. We will get a good distribution of marks, which is ideal for a set of problems.

Eremin Vadim (Russia)

The Greek committee has been extremely careful to try to have an absolutely perfect paper to be clear to all the students. It took a great deal effort to do that. The students should be able to work well on the exam and with some luck they'll get a good distribution of medals.

Gordon Bates (Canada)

The organization looks nice. It appears that we enjoy Greek hospitality. The tasks are not too difficult and not too many either. They are appropriate. We have been waited the tasks to be connected with natural products being in Greek dishes.

Mario Anastasia (Italy)

Every year the questions are getting more and more difficult and this year what is special about the theoretical exam is the high number of questions and I think that many of the students will run out of time. But, anyway I wish good luck for them and I think that they are able to have a good exam.

Roozbech Kiani (Iran)



Discussing the tasks...



*Peter Wothers (United Kingdom)
and Gordon Bates (Canada)*



*Eremin Vadim,
the Head Mentor of Russia*

**The assessment of practical tasks
has begun!**



ANYONE CAN READ GREEK!

All the letters and vowel combinations are always pronounced the same in Greek. There are no silent letters, as in English (k in knife), or letter combinations that have a variable pronunciation. Consequently anyone can read Greek. Understanding the sounds, correct spelling and syntax are quite another matter. Greek is a very difficult language. The alphabet has only 24 letters and they are listed in the table. As you can see we have:

- Two different vowels “ο” and “ω” that sound exactly the same.
- The three vowels “η”, “ι” and “υ” also sound exactly the same.

There exist the following vowel combinations:

“ει”, “οι” and “υι” which correspond to the same sound as “η”, “ι”, “υ” and so we have a total of 6 long <e>.

Other vowel combinations are as follows:

αι = ε

αυ = af or av

ευ = ef or ev

ου = ou or short u

Thus, spelling Greek words correctly is no simple matter. As you can imagine, there are quite a number of general rules with many exceptions.

Verbs ending with the “ezo” sound are usually spelled with an “ι”, for example:

μυρίζω = <mirizo> : I smell,

γαυγίζω = <gavgizo> : I bark,

but

αθροίζω = <athrizo> : I add (with an “οι” instead of a “ι”)

δακρύζω = <dakrizo> : tears come to my eyes (with an “υ” instead of a “ι”)

Vowels ending with an “ο” sound are always written with an “ω”.

Some examples:

Hotel is “ξενοδοχείο” and is pronounced <ksenodochio>, not <ksenodocheio> which is the erroneous or Erasmic pronunciation.

Finally, we use “ ” to separate vowel combinations.

Product is “προϊόν” and is pronounced <proion>. Without the “ ” it would be pronounced <prion>.

Notice that we put an accent on the syllable that is stressed in the case of multi-syllable words.

I encourage you to practice your Greek by writing your name with Greek characters so that the Organizers might pronounce it correctly.

It would probably be best if you used “ι” rather than any other vowel or vowel combination to produce the long <e> sound. Keep it simple.

Letter	Greek name	Sound-pronunciation
α A	alpha	short <a> as in “hat”
β B	vita	<v> as in “very”
γ Γ	yamma	<y> as in “yacht”
δ Δ	delta	<th> as in “then”
ε E	epsilon	short <e> as in “get”
ζ Z	zeta	<z> as in “zoo”
η H	eta	long <e> as in “gene”
θ Θ	theta	<th> as in “think”
ι I	yiota	long <e> as in “gene”
κ K	kappa	<k> as in “kite”
λ Λ	lamda	<l> as in “little”
μ M	mi	<m> as in “must”
ν N	ni	<n> as in “night”
ξ Ξ	ksee	<x> as in “taxi”
ο O	omicron	short <o> as in “hole”
π Π	pee	<p> as in “play”
ρ P	rho	<r> is in “race”
σ Σ	sigma	<s> as in “slow”
τ T	taf	<t> as in “telephone”
υ Y	ipsilon	long <e> as in “gene”
φ Φ	fee	<f> as in “fish”
χ X	he	<h> as in “hat”
ψ Ψ	psi	<p> as in “play”
ω Ω	omega	long <o> as in “hole”

Dr Andreas Tsatsas
Assoc. Professor

GRAINS OF GREEK MYTHOLOGY IN THE PERIODIC TABLE



*Nb (left) and Ta (right)
Niobium is used in the aviation industry
Tantalum is used in making medical skull plates*

Tantalos, a mythical king of Hellenic Minor Asia, was the father of Niobi and Pelops. Niobi was a heroine of the Greek mythology, while Pelops was the parent of the Mycenaean civilization.

The myth has it that Tantalos revealed the secret for the nectar preparation to the mortals, punished for that by the Olympian Gods. He was condemned to eternal thirst and hunger tied in a lake without ever being able to drink, while a branch full of fruits was removed whenever he reached for it.

Tantalum ($_{73}\text{Ta}$, an element of the 5th group of the periodic table and of the 3rd row of transition metals), owes its name to the Tantalean torture of those who tried to work with tantalum pentoxide (Ta_2O_5), which is only dissolved in fused potassium bisulphate.

Tantalum is always spotted in its minerals along with another element initially named columbium (Cb). The two elements' similarity for a long time led to the assumption that there was only one element. Finally, Rose clearly pinpointed the existence of a separate element, which he proceeded to name Niobium ($_{43}\text{Nb}$, 5th group, 2nd row of transition metals) from Tantalos' daughter's name. Rose assumed, wrongly, that there was also an element named Pelopium, which was later proved to be the previously mentioned niobium.

Dr Despina Stambaki
Ass. Professor

Program of the day

Students

8:00-9:00	Breakfast at SC
9:00-14:00	Theoretical Examination at SC (lunch during the Exam – buffet)
15:00-20:00	Excursion to Epidavros and Nafplion
21:00	Dinner at SC

Mentors

6:30-7:30	Breakfast at Hotel
8:15-19:20	One Day Cruise – Saronic Gulf (lunch included)
21:00	Dinner

Contact for Information

Assoc. Prof. A. Tsatsas
National and Kapodistrian University of Athens
Department of Chemistry, Inorganic Chemistry Laboratory
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Tel.: +30-210-7274339
Fax: +30-210-7274782
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Patrina Paraskevopoulou, Christodoulos Makedonas and Constantinos Menidiatis
Inorganic Chemistry Laboratory, Department of Chemistry, NKUA



CATALYZER

Journal of the 35th International Chemistry Olympiad

11 July 2003

Athens – Hellas

Issue No. 7

Editorial

No more exams!!! The final test is over... We are looking forward to the results. Students are visiting today the Aluminum Factory at Viotia and Delfi one of the most important archeological sites of Hellas and without exaggerating of the whole world, since it was known to be the "omphalos" of Earth. According to the myth, two eagles had been released by Zeus from opposite ends of Earth and following great flights across the skies they finally met at Delphi.

Some mentors are marking the examinations and some others are going shopping.

In this issue you will have the opportunity to read comments from the students on the theoretical exams and, since you asked for it, we are coming back with more of "a little bit fun".

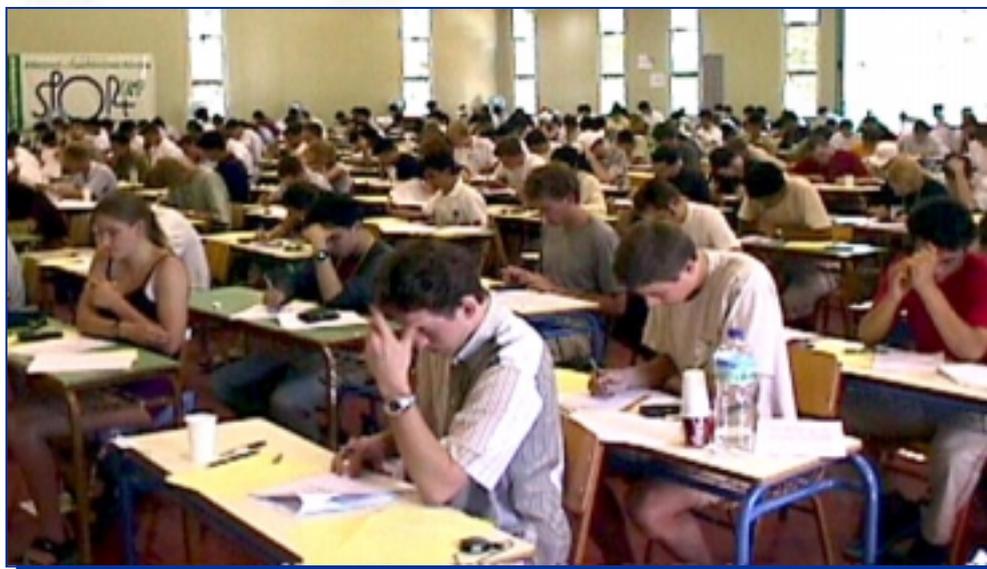
What's on a professor's mind?

The philosophy was to teach the students a few things and make them think and prove that chemistry is a mixture of many-many things. Of course we tried very hard for all of the scientific tasks to have prototypical component insight. I would like to admit that some of the scientific tasks of the section B, the physical chemistry section, are rather harder than the other sections. But it just happened, it was not intentional. That is the way physical chemists are thinking. Physical chemists are more close to physics, so of course things like that are projected through the difficulty of the scientific tasks.

Professor Aristides Mavridis
Department of Chemistry, NKUA

We chose a problem in Kinetics, because we believe that Kinetics is very important in Chemistry and in every other area of Science and also we chose a subject on Aluminum, because Hellas is producing Aluminum. So, we wanted to give a question on a problem, which refers to a product of Greece.

Associate Professor Athina Petrou
Department of Chemistry, NKUA



How did you find the theoretical tasks?



A nice exam of moderate difficulty. Big thanks to the organizers for making all happen.

Georg Zhong (Australia)

It was a beautiful exam. In order to make it, you had to know chemistry.

Kenny Bravo (Cuba)

I think it was easy and we should do everything very carefully.

Yan Zhou (China)

The exam seems very exhaustive, but also fair. It was creative and original.

Joel Yuen Zhou (Mexico)

The test didn't surprise me, but I'm not going to make any predictions about the results.

Helga Dogg Flosadottir (Iceland)

It wasn't impossible to solve. Too many tasks for five hours. The first task was too long and maybe the physical chemistry questions were the most difficult ones.

Aldena Saric (Croatia)

They were too many and there was the problem of running out of time.

Velisarios Masouras (Cyprus)

It was very easy. The medal depends on the practical exam. Physical Chemistry problems need work, but the organic part was very easy. It was a bit tight for time. The multiple choice questions were very easy apart from one or two.

Vikram Balasubramanian (India)

It was ok. The most difficult part was the physical chemistry one and still the most interesting. They were much more tasks than Gronigen.

Aliaksei Putau (Belarus)

They were easier than the previous years. They were too many, but also easy. The Physical Chemistry part was the most difficult.

Evgeny Beletsky (Russian Federation)

I think it was quite difficult. Some parts were ok, but other were more difficult.

Franziska Bell (Austria)

I thought that the exam was difficult, because there were questions that we never learned at the school. They were very difficult questions, especially the organic part.

Andre Ramos (Portugal)

I tried to do my best. The organic part was very difficult.

Hussein Nijem (Kuwait)

It was difficult, especially the organic part.

Carlos Oliveira (Portugal)

I didn't find them very difficult.

Anton Menshenin (Russian Federation)

The Temple of Delphi

Located about one hundred miles northwest of Athens is the ancient site of the Delphi. The complex of buildings, which includes the Temple of Apollo, The Tholos, and the Castalian Spring, is nestled in the forested slopes on the south side of the sacred mountain called Parnassus.

According to the earliest legends the site was originally a sacred place of the earth goddess Gaia and was guarded by her daughter, the dragon Pytho. Later legends state that Delphi was the center of the world as determined by the god Zeus. A still later legend relates that Apollo, the son of Zeus, came from his home atop Mt. Olympus to Mt. Parnassus to kill Pytho and to violently claim

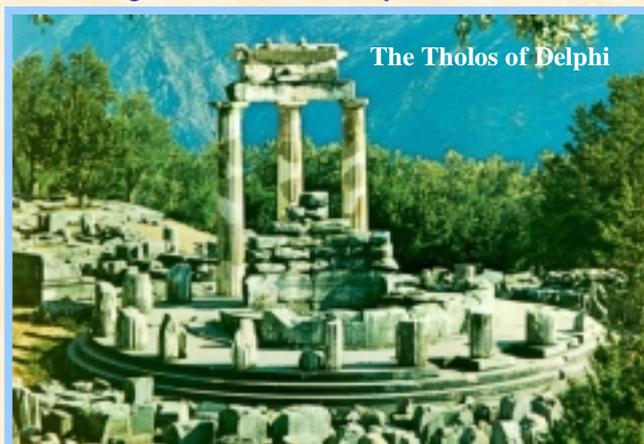
the site. Later repenting of his crime, Apollo purified himself and, returning to Delphi, persuaded Pan (the goat-god of wild places and evocative music) to reveal to him the art of prophecy. Upon the site of his battle, Apollo erected his own oracular temple and, at the exact place where he had 'speared' the dragon, an omphalos stone was set in the ground.

a chemist and a toxicologist teamed up to produce a wealth of evidence suggesting that the ancient legends had in fact been accurate. The region's underlying rocks turn out to be composed of oily limestone fractured by two hidden faults that cross exactly under the ruined temple, creating a path by which petrochemical fumes (methane, ethane and ethylene) could rise to the surface to help induce

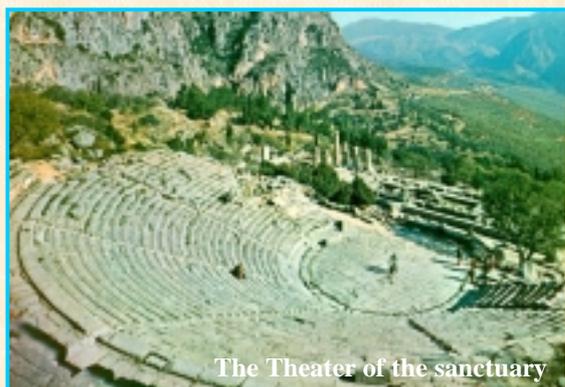
visions. In particular, the scientists found that the women communing with the oracle probably came under the influence of ethylene - a sweet-smelling but psychoactively potent gas - once used as an anesthetic.

The priestess was called Pythia and she

answered questions regarding the future once a month, for nine months each year. The answers, interpreted by male priests and then spoken in verse, proved so accurate that the Delphic oracle came to exercise enormous political and social influence in the Greek empire for nearly one thousand years. However the oracles were most of the times equivocal. For a variety of reasons the



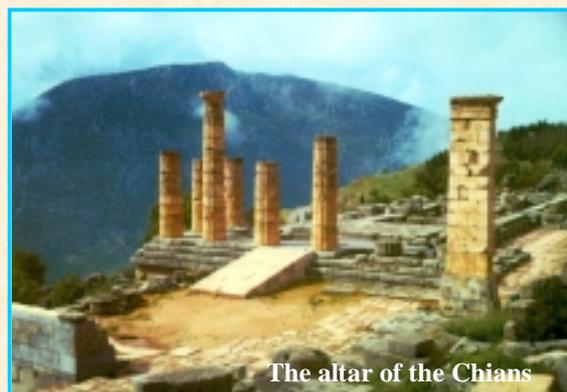
The Tholos of Delphi



The Theater of the sanctuary

Many archaic accounts of Delphi relate that the oracular priestesses, known as Pythia, sat upon a chair situated over a fissure in the earth from which emanated trance-inducing vapors.

Until recently this matter was considered to be a fabrication from post-Delphic times. During the late 1990's however, a geologist, an archaeologist,



The altar of the Chians

Delphic oracle was in decline by the 1st century AD and the last recorded oracle was in 362 AD. The arrival of the new god of Christianity signaled the death knoll of the ancient Greek oracle shrines and Delphi was abandoned to the elements.

Eva Karatairi, Student, Department of Chemistry, NKUA

A little bit fun...

Chemist's last words

- And now the tasting test...
 - And now shake it a bit...
 - In which glass was my mineral water?
 - Why does that stuff burn with a green flame?!?
 - And now the detonating gas problem.
 - This is a completely safe experimental setup.
 - Now you can take the protection window away...
 - Where do all those holes in my kettle come from?
- And now a cigarette...

If you're not part of the solution,
you're part of the precipitate!

A physicist, a biologist and a chemist were going to the ocean for the first time. The physicist saw the ocean and was fascinated by the waves. He said he wanted to do some research on the fluid dynamics of the waves and walked into the ocean. Obviously he was drowned and never returned. The biologist said he wanted to do research on the flora and fauna inside the ocean and walked inside the ocean. He, too, never returned. The chemist waited for a long time and afterwards, wrote the observation, "The physicist and the biologist are soluble in ocean water".

Program of the day

Students

- 6:30-7:30** Breakfast at SC
- 8:00-20:00** All-day excursion to Aluminum factory and Delphi
- 20:00** Dinner at SC

Mentors

- 8:00-9:00** Breakfast at Hotel
- 9:00-13:00** Marking examinations & Free Morning for Shopping
- 13:00-14:00** Lunch at Hotel
- 17:00-20:00** Special Anniversary Meeting at Evropi Conference Room (President Hotel)
- 20:00** Dinner at Hotel

Contact for Information

Assoc. Prof. A. Tsatsas
National and Kapodistrian University of Athens
Department of Chemistry, Inorganic Chemistry Laboratory
Panepistimiopolis 15771 Athens, Hellas

Tel.: +30-210-7274339
Fax: +30-210-7274782
e-mail: 35icho@uoa.gr

Editorial Team

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Councilor of Chemistry, Pedagogical Institute

Patrina Paraskevopoulou, Christodoulos Makedonas and Constantinos Menidiatis
Inorganic Chemistry Laboratory, Department of Chemistry, NKUA



CATALYZER

Journal of the 35th International Chemistry Olympiad

12 July 2003

Athens – Hellas

Issue No. 8

Editorial

While scientific Committee and mentors are busy with the assessment and arbitration procedure, students enjoy a morning walk on the sacred rock of Acropolis above the picturesque alleys of Plaka. *Ce la vie!*

In this issue, Assist. Prof. Panayiota Moutevelis-Minakakis on behalf of the scientific Committee, keeps the interest on the theoretical tasks by explaining the philosophy behind the selection of the organic chemistry questions.

Moreover, Mr Shinji Shimizu honors our newsletter by granting a mini interview. Mr Shinji Shimizu is a journalist, who came to our country to cover the 35th IChO, on behalf of Seikyo Shimbun, a big Japanese newspaper. This is why his opinion is of great importance.

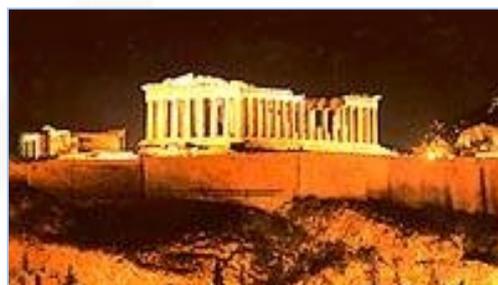
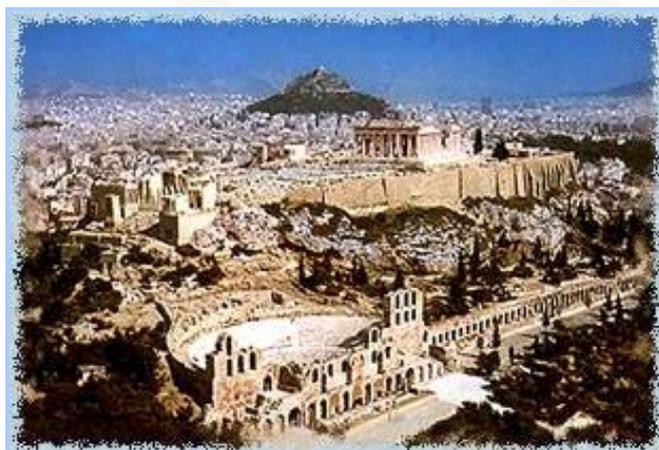
Finally, a page full of photos is dedicated to all our friends, who did not have the opportunity to enjoy their pictures in the previous issues.

ΓΝΩΘΙ ΣΑΥΤΟΝ

To know yourself

This proverb was graven at the pronaos of Apollo's temple at Delphi. It is said that these words belong to Thallis the Militian or Hilon the Lacedemonian two of the seven wise men of Ancient Greece.

**“Just a perfect day...”
(exams are over!)**



Some more comments from a member of the Scientific Committee

Our major goal, as far as the organic chemistry tasks are concerned, was to give students the opportunity to answer the questions using creativity and imagination.

It is for this reason that we preferred questions on stereochemistry, which require students to imagine molecules in space.

This is, after all, the quintessence of organic chemistry.

Students should not use rote learning, but they should use critical thinking.

**Panayiota Moutevelis-Minakakis
Assist. Professor, Department of Chemistry, NKUA**

PHOTO ALBUM



FROM A REPORTER'S POINT OF VIEW



Shinji Shimizu
Overseas correspondent for Europe
of *Seikyo Shimbun* (Tokyo)

Please tell us the purpose of your presence in our country.

I am a Japanese journalist, overseas correspondent for Europe of one of the biggest Japanese newspapers. The 35th IChO Organising Committee kindly gave me the opportunity to take some photos and interviews, covering this event, because the IChO is not well known to the Japanese people. It is the first time that Japan takes part in this competition and the Japanese general public is very interested in the Olympiad. The Minister of Education and Religious Affairs, Mr Petros Efthymiou, encouraged the Japanese representative students after the Opening Ceremony. So, I am very happy that for the first time Japanese students, who are very capable and responsible for the future of Japan, have this splendid opportunity to be here in Greece together with such excellent students from all over the world. This is what I want to transmit to Japanese journalists to be published in a couple of days.

Would you like to tell us a few words for the whole organisation of the 35th IChO?

First of all, it is very well organised in terms of hospitality. Greek guides, who are warm-hearted

and very kind gave me in details the atmosphere of friendship and trust among the students in the camp. Students are very happy to be here and you are very friendly welcoming all of them. This opportunity should be continued next year and even one hundred years more. Mr Efthymiou reported to us that this is the best opportunity for students to create world peace and mutual understanding in the future. I appreciated publishing the photo of the Japanese delegation.

Why didn't Japan participate earlier?

There is high competition to enter the University. The high school has to limit the quantity of knowledge needed for the Entrance Examinations. Students enroll in the University in April, so they do not have the time to prepare themselves for the Olympiad. It is really a challenge for the Japanese students, because they have to do two things: preparation for the University exams and at the same time for the Olympiad.

Do you think a gold medal is possible for Japan?

I don't know, because the Asian countries, Taiwan, China, Korea, are so excellent. The Japanese people respect their capacity and also this is really a start for the Japanese students.

We would like to hear your opinion about "Catalyzer", since we are not professionals.

On the contrary, I really want to learn from you. There are two things in general: Does what I want to write coincides to what people really feel? This combination of feelings, being united between the person who writes and the person who is interviewed. Heart-to-heart communication makes the article alive and maybe the photos do the same. But it is sometimes very difficult to write what people really want to read. But we should have a philosophy very firm and a clear point of view and sometimes to encourage people to make some very positive comments for themselves, but finally it depends on ourselves. In this sense this "Catalyzer", in terms of the alive atmosphere you are transmitting, is very good and the photos are also vivid. I am very impressed!



Tapio Salminen



Henry Bittig

Happy Birthday!

Students

Program of the day

Mentors

8:00-9:00 Breakfast at SC

9:00 Coaches depart for return to Athens

10:30-12:30 Visit to Acropolis

12:30 Return to President Hotel for check-in

13:30 Lunch

15:00-20:00 Free afternoon

20:00-21:00 Dinner at Hotel

8:00-9:00 Breakfast at Hotel

9:00-12:00 1st session of Arbitration
Mezzo: President Hotel

9:00 Free time to explore the Acropolis (including lunch in Plaka) for 2nd and 3rd Arbitration

12:00 1st group of Arbitration free time (including lunch in Plaka)

14:00-16:00 2nd session of Arbitration
Mezzo: President Hotel

16:00-19:00 3rd session of Arbitration
Mezzo: President Hotel

20:00-21:00 Dinner at Hotel

21:00-23:00 3rd Jury Meeting:
Allocation of Medals

Quiz

N I C H O L A S is a common name in many countries. Eighteen elements are "hidden" in it. Can you find them?

Contact for Information

Assoc. Prof. A. Tsatsas
National and Kapodistrian University of Athens
Department of Chemistry, Inorganic Chemistry Laboratory
Panepistimiopolis 15771 Athens, Hellas

Tel.: +30-210-7274339
Fax: +30-210-7274782
e-mail: 35icho@uoa.gr

Editorial Team

Dr Anthony Bobetsis
Counselor of Chemistry, Pedagogical Institute

Patrina Paraskevopoulou, Christodoulos Makedonas and Constantinos Menidiatis
Inorganic Chemistry Laboratory, Department of Chemistry, NKUA



CATALYZER

Journal of the 35th International Chemistry Olympiad

13 July 2003

Athens – Hellas

Issue No. 9

Editorial

The 35th International Chemistry Olympiad comes to an end and the interest is focused on the medals' award. The final results will be announced a few hours later at the closing ceremony at Zappeion Megaron.

The editorial team of "Catalyzer" tried to cover the competition as adequately as possible. In terms of content, we put an emphasis on the interviews taken from all the groups involved: the Organising Committee, the Scientific Committee, the guides, the mentors and especially the students, keeping in mind that this newsletter should be written mainly by its readers. This goal would not have been accomplished without your co-operation. We feel much obliged and we thank you all.

We would also like to thank Ass. Professor Chryssa Tzougraki for providing us the computing facilities of the postgraduate program "Chemical Education and New Educational Technologies", Ms Katerina Salta, Chemist, M.Sc., and Dr Esther Sakki for their kind assistance.

Last, but not least, we thank Ms Valia Loutrianaki, teacher of Greek literature, for her precious help in the editing and setting type of the newsletter.

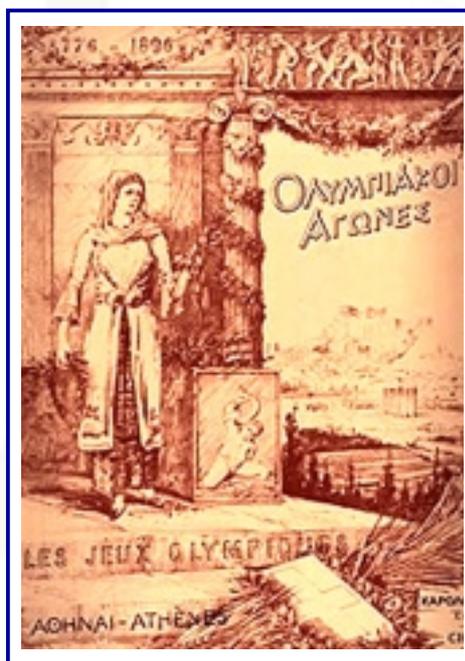
Furthermore, we would like to apologize for any error or omission occurred.

Concluding, we would like to congratulate all students for their participation and to express our best wishes to the German delegation for a successful 36th IChO.

Good luck Germany! Good luck Kiel!

**“Not to have conquered,
but to have fought well”**

Pierre De Coubertin (1896)



The official poster of the first Modern Olympic Games. Athens, 1896

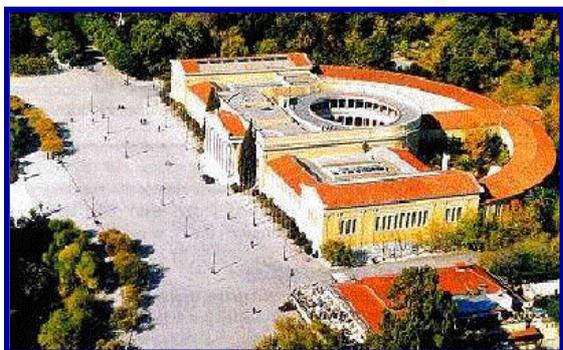


**We hope to see you again next year
at the Olympic Games in Athens!**

We wish all students, mentors, observers and guests a safe trip back home!

THE ZAPPEION MEGARON

The Zappeion is the small park area between the National Garden and the Olympieion. In it you will see the handsome Zappeion Megaron, designed by the architect Theofil Hansen and built in 1874-1888. The Zappeion Hall was built by the national benefactor Evangelos Zappas and was inaugurated in October 1888, for the purpose of hosting important exhibitions and other events.



The Doric columns of its facade, its imposing atrium, and the steps up to the main entrance stand out against the dark green of the pathways making the majesty of the building even more apparent. Athenians love to stroll in the area around the Zappeion. Its little paths are where



groups of Athenians hold sessions of their outdoor parliaments, attempting to solve the country's problems, on the model of the outdoor parliament of Hyde Park in London.

During its history, it has developed into a multi-purpose centre, having served as the offices of the Greek Presidency of the European Union. During elections, it is used as a Press Centre. The Zappeion Hall is connected with the history of the first modern Olympic Games in 1896, having been the main building of the Olympic village for those games. It was also the place where Greece's accession to the European Economic Community was signed, on 29 May 1979.

Special Anniversary

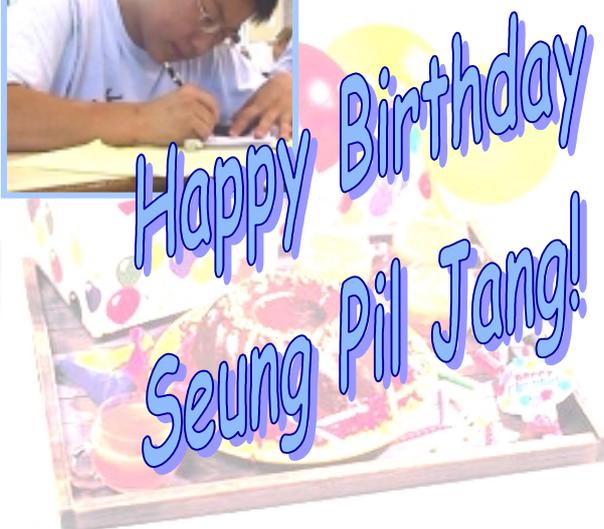
At Friday's night the Special Anniversary Meeting for the celebration of the 35 years of the International Chemistry Olympiad took place at the President Hotel. Mr Anton Sirota, the head mentor of the Slovakian delegation, presented all the previous Olympiads, giving a brief history of the IChOs (1968-2003).

PARTICIPATING COUNTRIES

ARGENTINA	KOREA
AUSTRALIA	KUWAIT
AUSTRIA	KYRGYZSTAN
AZERBAIJAN	LATVIA
BELARUS	LITHUANIA
BELGIUM	MEXICO
BRAZIL	NETHERLANDS, THE
BULGARIA	NEW ZEALAND
CANADA	NORWAY
CHINA	POLAND
CROATIA	PORTUGAL
CUBA	ROMANIA
CYPRUS	RUSSIA
CZECH REPUBLIC	SINGAPORE
DENMARK	SLOVAKIA
EGYPT	SLOVENIA
ESTONIA	SPAIN
FINLAND	SWEDEN
FRANCE	SWITZERLAND
GERMANY	TAIPEI
GREECE	THAILAND
HUNGARY	TURKEY
ICELAND	TURKMENISTAN
INDIA	UKRAINE
INDONESIA	UNITED KINGDOM
IRAN	UNITED STATES
IRELAND	URUGUAY
ITALY	VENEZUELA
JAPAN	VIETNAM
KAZAKHSTAN	

OBSERVING COUNTRIES

PERU	TAJIKISTAN
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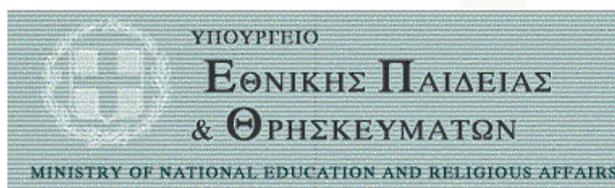


Program of the day

8:00-9:00	Breakfast at Hotel
9:00-13:00	Free time for shopping in Plaka and at Monastiraki Flea Market
14:00-15:00	Lunch
18:00	Coaches depart for Zappeion
18:30-20:00	Closing Ceremony at Zappeion
21:00	Party

Program of the Closing Ceremony

18:30	Welcome by Dr. A. T. Tsatsas President of the 35 th IChO
18:40	Review of the results of the exams by Prof. A. Mavrides, Chairman of the Scientific Committee
19:00	Medals award Ceremony
19:45	Official Closing of the International Chemistry Olympiad
19:50	Presentation of the Olympiad Flag to Germany, the host of the 36 th IChO presented by Dr. A. T. Tsatsas and Dr. S. Koinis



NATIONAL AND KAPODISTRIAN
UNIVERSITY OF ATHENS



ASSOCIATION OF GREEK CHEMISTS



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Music Department
of NTUA

Contact for Information

Assoc. Prof. A. Tsatsas
National and Kapodistrian University of Athens
Department of Chemistry, Inorganic Chemistry Laboratory
Panepistimiopolis 15771 Athens, Hellas

Tel.: +30-210-7274339

Fax: +30-210-7274782

e-mail: 35icho@uoa.gr

Editorial Team

Dr Anthony Bobetsis

Councilor of Chemistry, Pedagogical Institute

Patrina Paraskevopoulou, Christodoulos Makedonas and Constantinos Menidiatis
Inorganic Chemistry Laboratory, Department of Chemistry, NKUA