DAY 9: Monday, 29 July

STUDENT

- 8:30 a.m. – 11:30 a.m.
  Free time,
  luggage preparation
- 3:30 p.m. – 6:30 p.m.
  Closing ceremony –
  Maison de la Chimie
- 8:00 p.m. – 1:00 a.m.
  Farewell diner
  › Cité des Sciences
  et de l'Industrie

MENTOR

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Maison de la Chimie

Birthday

José Roberto Vega-Baudrit *Costa Rica* Head mentor

Meteo

27°C
sun

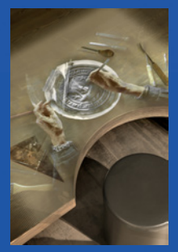
making science together!

The IChO 2019 in pictures

We are sure everybody has lots of fun memories of this week in Paris. Share yours with us on social media with the hashtag #IChO2019!

Discover the 11 Conti Museum!

The 11 Conti Museum offers a unique experience involving metal, know-how, and heritage. Thanks to many interactive devices, the Museum takes its visitors behind the scene of Monnaie de Paris' manufacture, temple of coinage and workmanship. Bringing together art, chemistry, history and economy, it reveals the wealth of talent in the workshops and the richness of the collections. It's in this manufacture, in the heart of the capital, that the IChO's medals have been created.
For more information, visit **monnaiedeparis.fr**



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MINISTÈRE DE L'ÉDUCATION NATIONALE

MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR, DE LA RECHERCHE ET DE L'INNOVATION

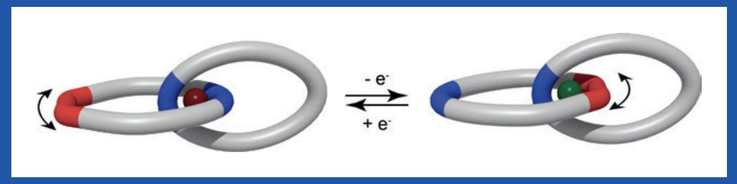
POUR L'ÉCOLE DE LA CONFIANCE

Scientific visit of Paris!

This week-end, participants had the occasion to visit the Cité des Sciences et de l'Industrie of Paris and the Palais de la Découverte. Two iconic places for science lovers!

I C h O
51st — International Chemistry Olympiad
France — Paris — 2019

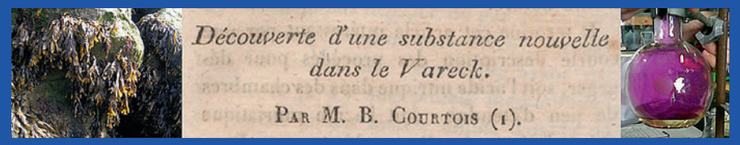
Problem T7: Swinging of a [2]-Catenane



In the early 80's, Jean-Pierre Sauvage (University of Strasbourg) designed an efficient metal templated strategy for the synthesis of catenanes. He had been inspired by the concepts of supramolecular chemistry developed by his PhD advisor and 1987 chemistry Nobel Prize winner J.-M. Lehn. As explained in Catalyzer (n°1), such a molecule is constituted of two interlocked rings like two chain links. The versatile coordination-based strategy developed by J.-P. Sauvage enables an easy access to a wide variety of interlocked molecules such as rotaxanes, catenanes or molecular knots. Molecular machines such as switches, rotors, motors or muscles were then developed by controlling the position and motion of their inner components using chemical, electrochemical or photochemical stimuli. Directional motions, both linear and circular, emerge from a variety of complex chemical interactions introduced in preparatory problem 23 and problem T7.

In 2016, along with his friends and colleagues Sir J. F. Stoddart and B. L. Feringa, J.-P. Sauvage was awarded the Nobel Prize in Chemistry *"for the design and synthesis of molecular machines"*.

Problem T4: Violet serendipity



As you read in Catalyzer (n°2), iodine was discovered in 1811 by Bernard Courtois. As explained in problem T4, this discovery took place by chance, when Courtois had just started to use varec as a source of potassium to produce black powder.

He isolated crystals of iodine by condensation of the violet gas he observed. Then, in 1812, he asked two colleagues (N. Clément and B. Désormes, whom he met at the École Polytechnique) to investigate on this new substance and report it to the Académie. It took more than a year to get it published in Annales de la Chimie. Indeed, the work on this discovery needed the visit of a British scientist, Sir Humphrey Davy, to catalyze the work of the academician J. L. Gay-Lussac who did not want to let the English chemist collect all the glory for this discovery, at these remote times of tension between the two countries.

The new substance was finally named iodine because of its color: in ancient Greek, ἰώδης means violet. This reminds what caught Courtois' attention in the first place and outlines that, as Pasteur said later: "Chance favors the alert mind".

Periodic ID card of the day

88 . Radium

Discovery: 1898
by Pierre and Marie Curie (Paris France)
Family: Alkaline earth metal
Period: 7th

88 226,0254
Ra
RADIUM

A few of its properties

The words "radium" and "radioactivity" were born together, and the discovery of the first led to the discovery of the latest and started the radiochemistry. The activity of 1 g of Radium gave the unit of measure for radioactivity: the curie. Radium is a white and soft metal, darkening when exposed to air. It is found in infinitesimal quantities (production 10 g/year) in uranium ores such as pitchblende (3 tons processed per 1 g of isolated radium). It is the only radioactive alkaline earth metal (half-life 1,600 years) producing radon by decay.

Game of the day

The two missing letters in the table of the elements

The symbols for the chemical elements in the periodic table are formed by one or two letters from the Latin alphabet. We celebrate 150 years of the table and its first 7 rows and 118 elements have now all been named. Interestingly, you can find all the letters of the Latin alphabet in the periodic table except two! Do you know which ones are missing?

Answer – Game of Sunday, 28 July

A) 2 - S) 4 - N) 1 - P) 5 - D) 3

Vocabulary

Dernier jour	Last day
Garder contact	To keep in touch
Se revoir	To meet again
Semaine	Week
Mois	Month
Année	Year
À bientôt	See you soon!
Le revers de la médaille	Literally: the reverse of the medal Meaning: the bad side of a good thing

Last experiences in Paris!

Thanks to the interactive activities, students can keep learning!

Always having fun with the guides!

Students experienced the famous Géode of the Cité des Sciences.

After rating the exams, mentors and authors discussed the students' final grades before the Closing Ceremony and the results announcement.