

Heritage and History of Chemistry: WPHC Online Event, 20 May 2021

On May 2020, the [Working party on the History of Chemistry](#) (WPHC) organized an online event on the topic of “[Heritage and History of Chemistry](#)”. It was organized in order to fill the gap between the past 12th ICHC, that was held in Maastricht, The Netherlands, in August 2019, and the forthcoming [13th ICHC](#), which was postponed from May 2021 to May 2023 in Vilnius, Lithuania, because of the pandemic.

The online event consisted of two panels. The first one, titled *Chemical Landmark Projects and Heritage Initiatives*, included an Opening Lecture devoted to the recently established European Chemical Society Historical Landmark by Brigitte Van Tiggelen, former chair of the WPHC. The subsequent papers discussed national projects in Japan, France, the US, and Germany. The second panel, titled *Chemical Sites, collections and preservation*, included different presentations on collections from France, Italy, Russia, Denmark, Latvia, and Portugal. The online event was organized and chaired by Ernst Homburg and Ignacio Suay-Matallana. The technical support provided by the EuChemS secretariat for setting up the webinar was crucial. It allowed the audience that amounted to a hundred participants to ask questions and discuss briefly the short talks.

The webinar proved to be an excellent way to showcase different projects on the heritage of chemistry, demonstrating at the same time connections beyond the different sites and projects. For instance, it showed the collaboration between the WPHC with other EuChemS groups, as well as the connections between the material culture of chemistry and the industrial heritage. The variety of places and spaces that can be considered as historical landmarks was broad, ranging from laboratories, factories or mines, to schools and high schools, and even non-physical places for commemorating the publication of books, the elaboration of theories or the development of patents.

The event also showed the different possibilities of connecting the history of chemistry and its material culture with other social and historical topics. History of chemistry collections offer an excellent opportunity to analyse science education, as well as to develop didactic projects with students. They also showed the links between colours, dyes and artisanal practices, related to art, textile industries and other technical processes. Collections need to be periodically studied and inspected, because their preservation is a challenge for the institutions. All in all, the presented case-studies stressed the importance of preserving and studying collections jointly with other historical sources, such as archives, in order to articulate a broader perspective of both individual scientist’s careers, the evolution of science, and the very identity of chemistry.

The online event was thus an excellent opportunity to put together recent work on the history of chemistry and on chemical heritage from different countries. It also fostered discussions among panellists and participants, who could spot similarities and think of synergies, and potential partnerships with different institutions and disciplinary contexts. Last but not least, it was an opportunity to be connected to new audiences world-wide, and to promote joint projects between EuChemS members, as well as with other scholars interested in scientific landmarks, heritage, sites and collections. Hopefully, this event will open new avenues of collaborative projects which can be discussed in future meetings such as the [13th ICHC \(Vilnius 2023\)](#). The programme of the event as well as the full list of abstracts is presented below. The WPHC online event was recorded, and the video is available [here](#).

Ignacio Suay-Matallana (Interuniversity Institute López Piñero-UMH), and Ernst Homburg (Maastricht University)

13:00-14:30 (CET) Chemical Landmark Projects and Heritage Initiatives (chair: Ernst Homburg)

13:00-13:30 Opening & Plenary Lecture by Brigitte Van Tiggelen

Sharing European chemical heritage, experiences and projects

13:30-13:45 Yoshiyuki Kikuchi, and Kazutaka Arai

CSJ's 'Chemical Heritage Japan' Programme and historical chemical sites in Central Japan

13:45-14:00 Florence Hachez-Leroy

Industrial heritage of chemical industry in France: work in progress...

14:00-14:15 Carmen Giunta

The ACS National Historic Chemical Landmarks and the HIST Citation for Chemical Breakthrough programs

14:15-14:30 Christine Nawa

Making history visible: The Historic Sites of Chemistry programme in Germany

15:00-16:30 (CET) Chemical sites, collections and preservation (chair: Ignacio Suay-Matallana)

15:00-15:15 Françoise Khantine-Langlois

ASEISTE: an association that preserves chemical heritage in France

15:15-15:30 Pierandrea Lo Nostro

The Chemistry collection at the Museum of Natural History of Florence

15:30-14:45 Alla Nudel

Saving the heritage of the famous Russian chemist N. Zelinsky

15:45-16:00 Asbjørn Petersen

A Historic collection of compounds from the birth of the coordination chemistry

16:00-16:15 Mara Jure, and Alida Zigmunde

Riga one of the historical chemistry centers of Eastern Europe

16:15-16:30 Isabel Malaquias, and João A.B.P. Oliveira

The amazing historical collections of didactic instruments of Portuguese secondary schools

Abstracts and author's information:

Brigitte Van Tiggelen

Brigitte Van Tiggelen works with the Science History Institute as Director for European Operations, and chaired the Working Party on the History of Chemistry since 2013. She is the chair of the selection committee for the EuChemS Historical Landmark award which was launched in 2018 by the European Chemical Society.

Sharing European chemical heritage, experiences and projects

In 2017, the European Chemical Society (EuChemS) established the EuChemS Historical Landmarks Award (HLA). This new award is the first and only among EuChemS prizes dedicated to chemistry long past and wishes to identify places of historical significance in the development of the discipline. It was conceived at a time many were preparing for the European Year of Cultural Heritage in 2018 and founded on the realization that only a few sites or events were related to science and technology, let alone chemistry. Compared to existing programmes run by national chemical societies (such as the RSC "Blue Plaques" or the GDCh "Historische Stätte der Chemie"), the HLA aims to stress the European dimension for at least two audiences. It reinforces the sense of belonging of European chemists and reminds them that as far as the history of chemistry goes, people and ideas alike have circulated. It also brings to the general public some sense of how chemistry is part of the general cultural heritage and history of every European citizen. This presentation will briefly explain how that rationale has materialized so far, with the 2018 and 2019 awards, including the

challenges and accomplishments, and how the WPHC may support the initiative and contribute to map the chemical heritage in Europe beyond the award scheme.

Yoshiyuki Kikuchi, and Kazutaka Arai

Yoshiyuki Kikuchi is a historian of modern chemistry in Japan and Britain, focusing on the Anglo-Japanese relation in science and technology. He is an associate professor at the Department of British and American Studies, Aichi Prefectural University, and Vice-President of the Japanese Society for the History of Chemistry.

CSJ's 'Chemical Heritage Japan' Programme and historical chemical sites in Central Japan

The Chemical Society of Japan (CSJ) established a Chemical Heritage Committee in 2008 and started its accreditation project in the following year, certifying more than 50 items to this date. The committee's aim is to raise the public awareness of the "concrete objects and documents attesting the history of sciences and industries relating to chemistry from the late Tokugawa period onwards," but certified items also include what one would call "chemical sites" such as laboratories and factories equipped with "concrete objects." This talk will give an outline of the CSJ's Chemical Heritage Programme and introduce some chemical sites in the Central Japan (Chubu) region, where one of the authors is based.

Florence Hachez-Leroy

Florence Hachez-Leroy is Associate Professor of modern history at Artois University and researcher at the Centre de Recherches Historiques, is a historian of the enterprises and of the modern materials. Her work crosses the economic, technical, social, cultural and heritage aspects.

Industrial heritage of chemical industry in France: work in progress...

The heritage of the chemical industry is a difficult subject: it raises a great deal of reluctance, very little work is devoted to it, the sites are often dangerous and polluted, their reconversion poses problems. In 2016, CILAC devoted a special issue of its journal to this theme. There was no claim to cover the topic: many parts of the chemical industry are not mentioned or are only touched on. This was viewed as the first stage of a larger project. The heritage of chemistry in France is rich, multiple, old and unavoidable: France counted among the three leading countries in the nineteenth century, from the points of view of both research and industry, alongside Germany and United Kingdom. Several French companies had then international stature even if many of them disappeared or sold their chemical activity in the late twentieth century in the great merger and acquisition game. The conclusion is unanimous: this heritage has little been considered and its buildings, objects and archives have suffered great damages. Its intangible heritage is also largely absent. The reasons remain to be explored. The poor image of this industry in public opinion cannot be the only explanation. Companies have a share of responsibility, as well as public institutions working in the field of culture and heritage. Also, the rapid obsolescence of processes and infrastructures and the negative impacts on the environment have also contributed to the lack of interest in the topic.

Carmen Giunta

Carmen Giunta is Editor of the Bulletin for the History of Chemistry and Professor Emeritus of Chemistry at Le Moyne College.

The ACS National Historic Chemical Landmarks and the HIST Citation for Chemical Breakthrough programs

The American Chemical Society's National Historic Chemical Landmarks program (NHCL) has been recognizing (NHCL) achievements of the past since 1993. The ACS Division of the History of Chemistry has been operating the Citation for Chemical Breakthrough awards program (CCB) since 2006. Public outreach is the principal mission of the NHCL program, at least in recent years.

Chemists and teachers and students of chemistry are the main audience for the CCB program. Similarities and differences in emphasis, procedure, scale, and scope between the programs will be described by the presenter, drawing on a decade of service on the committees that recommend the awards in both programs (but not speaking officially for either).

Christine Nawa

Christine Nawa is a historian of science, specializing in 19th century history of chemistry. Since 2015 she has been working at the Centre for Collection Development of the University of Göttingen, in Germany.

Making history visible: The Historic Sites of Chemistry programme in Germany

In 1999, the German Chemical Society (Gesellschaft Deutscher Chemiker, GDCh), began to designate sites of major achievements by notable chemists as “Chemical Landmarks”. While this first event was celebrated together with the American Chemical Society (ACS), the GDCh continued the programme from 2002 onwards on its own under the name “Historische Stätten der Chemie”. By now, the programme is well established and 19 “Historic Sites of Chemistry” serve both as anchorage for identity building within the chemical sciences, and as a means to foster public appreciation for the contributions of chemistry. In my paper, I will point out, that it is joint efforts of committed local groups on the one hand and the steering and coordinating role of GDCh’s main office on the other, that made this programme a success.

Françoise Khantine-Langlois

Françoise Langlois was professor in University technical department, and currently she is an associate researcher at the laboratory “Sciences and Society, Historicity, Education, Practices” of the Lyon 1 University. She manages the University's heritage of physical instruments and is president of ASEISTE, Association for Preserving and Studying the Scientific and Technical Instruments of Education. Her paper is titled “ASEISTE: an association that preserves chemical heritage in France”

ASEISTE: an association that preserves chemical heritage in France

The ASEISTE is a French association, founded in 2004, aiming at the preservation of the scientific and technical instruments of education (Association de Sauvegarde et d’Étude des Instruments Scientifiques et Techniques de l’Enseignement: Association for Preserving and Studying the Scientific and Technical Instruments of Education). The main objectives of ASEISTE are: to rescue and preserve instruments and collections in schools and universities and develop pedagogical projects involving this scientific historical heritage in collaboration among members and professors. The ASEISTE website (<http://www.aseiste.org>) includes a complete catalog of more than 7692 ancient scientific objects, including 590 instruments specific to chemistry. It is always enriched by new contributions.

Pierandrea Lo Nostro

Pierandrea Lo Nostro is an associate professor at the Dept. Chemistry "Ugo Schiff" of the University of Florence where he teaches Physical Chemistry and History of Chemistry. He is the Scientific supervisor for the Chemistry Collection of the Museum of Natural History of the University. He is also Editor-in-Chief of *Substantia*, an International Journal of the History of Chemistry. His paper is titled “The Chemistry collection at the Museum of Natural History of Florence”.

The Chemistry collection at the Museum of Natural History of Florence

This talk will offer a virtual tour to the collection of Chemistry of the Museum of Natural History. The collection is temporarily hosted by the Department of Chemistry of the University and comprises about 1,000 chemicals, instruments and documents, starting from the second half of the 19th century with the seminal work of Ugo Schiff that moved to Florence in 1863.

This unique collection consists of four different sets of great historical and scientific value: the Schiff Collection, the Collection of Antique Instruments, the Collection of Historical Furniture with cabinets and chemical benches, and the Bigiavi Collection with historical chemicals.

Alla Nudel

Alla Nudel, is a senior researcher and a curator of the collections of the Moscow Polytechnic Museum. She is now very interested in the history of the chemical laboratory of the Polytechnical Museum of Moscow and how this space contributed to the development of science, education and museum affairs. Her paper is titled "Saving the heritage of the famous Russian chemist N. Zelinsky".

Saving the heritage of the famous Russian chemist N. Zelinsky

In 1995, the curators of the Moscow Polytechnical Museum became aware that the chemical laboratory, which was a part of the Memorial Museum of the well-known Russian scientist N. Zelinsky, the inventor of the coal gas mask, was being liquidated for economic reasons. The new owners took out the laboratory equipment, furniture, and etc. that had become unnecessary to the landfill. Thanks to the joint efforts of the employees of the Polytechnical Museum and the son of the scientist A. Zelinsky, who was the director of the Memorial Museum, the unique laboratory equipment was saved from destruction.

Now the equipment from the N. Zelinsky's chemical laboratory is carefully kept in the collection of the Polytechnical Museum. Many items have been restored and are often used for exhibitions. These authentic subjects are important to us because they assist us to research the history of chemistry.

Asbjørn Petersen

Asbjørn Petersen is an Inorganic chemist from University of Copenhagen. His main chemical research is focused on coordination compounds of transition metals. Now he is teaching chemistry in an upper secondary school and he is the Chair of The Danish Society for the History of Chemistry. His paper is titled "A Historic collection of compounds from the birth of the coordination chemistry".

A Historic collection of compounds from the birth of the coordination chemistry

The Danish chemist S. M. Jørgensen (1837-1914) developed between 1878 and the turn of the century methods for preparation of the compounds we now call complexes of the transition metals with ligands like ammonia, water, halogenides etc. The Swiss chemist A. Werner showed the suitability of a model with a central metal atom surrounded by the ligands. The Werner model became increasingly accepted and Werner won the Nobel Prize in Chemistry 1913 for this work. Jørgensen never accepted the Werner model - at least not in public. But the compounds that was the basis for all this still exists. For decades rumours told about as much as 600 samples of Jørgensens complexes. Recently they were "rediscovered" in the stores of the Technical University of Denmark. Not surprisingly they were not labelled according to modern standards and therefore close to being regarded as dangerous waste. The Danish Society for the History of Chemistry has undertaken the task of making an acceptable registration. This work includes reading and decoding the old handwritten labels followed by interpretation of the special Jørgensen lingo. Also, the substances are inspected visually and described. After this they are registered according to content of poisonous elements and are given modern names. For some samples the actual content has been checked by Raman spectroscopy and powder X-ray analyses. Actually, there were 803 compounds and our work is now almost halfway done.

Mara Jure, and Alida Zigmunde

Mara Jure holds a PhD in chemistry, and she is, Professor at the Riga Technical University, Head of the Department of Chemical Technology of Biologically Active Compounds. She is an observer an observer from Latvia at the WPHC

(since 2019). She has edited two books about history of chemistry in Latvia. She is presenting a paper, jointly with Alida Zigmunde, titled “Riga one of the historical chemistry centers of Eastern Europe”.

Riga one of the historical chemistry centers of Eastern Europe

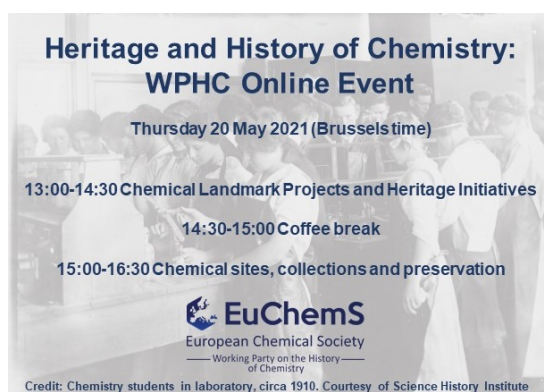
The former Faculty of Chemistry of the Riga Polytechnic Institute - the cradle of the Latvian school of chemistry - was built in 1901. The Latvian Museum of the History of Chemistry (<https://www.lu.lv/lu-muzejs/kolekcijas/latvijas-kimijas-vestures-muzejs/>) is housed in two rooms of this building. It stores more than 10000 items, including the unique laboratory equipment and devices created by Riga chemists. Although the museum was officially opened only in 1975, the origins of the collection can be traced back to 1919. The museum houses the first X-ray diffractometer in Latvia used by M.E. Straumanis and A. Ievins for development of the method for accurate lattice parameter measurement (known as the “assymetric Debye-Scherrer method”), Carl Zeiss emission spectrometer, three generations of polarographs, viscosimeter created by Wilhelm Ostwald for the experimental work of Svante Arrhenius and exposition of chemical reagents manufactured in Germany in the 1920s and 1930s. Collection contains diploma works of graduates, chemistry text books, as well as historical materials about the development of chemical industry and science in Latvia.

Isabel Malaquias, and João A.B.P. Oliveira

Isabel Malaquias holds a PhD in Physics – History and Philosophy of Physics with a graduation in Physics, Chemistry and Education. She is associate professor at University of Aveiro, Physics Department. She usually lectures courses in General Physics, Experimentation and History of Science. Her research interests are the History of science, namely of scientific instruments, personalities and networks, the history of scientific teaching. Among her publications, co-authored the book For the Love of Science – The correspondence of Jean Hyacinthe de Magellan. She is presenting a paper, jointly with João Oliveira, titled “The amazing historical collections of didactic instruments of Portuguese secondary schools”. João .B.P. Oliveira is an associate professor of chemistry at the University of Aveiro. He received a BS degree in chemical engineering from the Technical University of Lisbon in 1976, and a PhD in analytical chemistry from the University of Virgínia, Charlottesville in 1985. His current interests are history of science chemometrics and chemical sensors.

The amazing historical collections of didactic instruments of Portuguese secondary schools

Some years ago, we tried to rescue to daylight some of the historic didactic instruments and apparatuses belonging to the oldest high schools in Portugal and the result was some astonishing perspective of what is usually part of school culture. In some cases, they can be dated back to the last quarter of the nineteenth century. Frequently they can be found displayed in the hallways or some dedicated rooms in the schools. What role do they have at present? Maybe they just remain as pieces of sociability and conversation, records from a scientific educative practice apprenticeship, testimonials of travelling knowledge, normalization standards or examples of the simplicity to display the concepts they were intended to. We will detail on some of those objects more related with chemistry practice. The website then created is being updated, but still remains as a true possibility to visit some of those historical instruments.




**Heritage and History of Chemistry:
WPHC Online Event**

Thursday 20 May 2021 (Brussels time)

13:00-14:30 Chemical Landmark Projects and Heritage Initiatives

14:30-15:00 Coffee break

15:00-16:30 Chemical sites, collections and preservation

 **EuChemS**
European Chemical Society
Working Party on the History
of Chemistry

Credit: Chemistry students in laboratory, circa 1910. Courtesy of Science History Institute