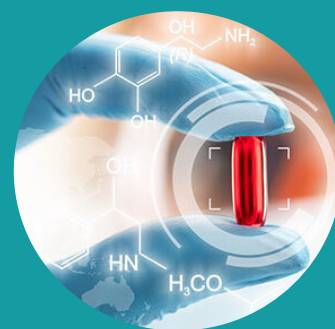




# 100<sup>th</sup>

## ANNIVERSARY OF THE FIRST SOLVAY CONFERENCE ON CHEMISTRY



26th Solvay Conference on Chemistry  
“Chemistry Challenges of the 21st Century”

Brussels, Belgium 17-19 OCTOBER 2022

# CONFERENCE BOOKLET

## TABLE OF CONTENT

---

Introduction	p. 1
Conference Schedule at a Glance	p. 2
Your arrival at Brussels	p. 3
Your departure from Brussels	p. 3
Hotel and conference venue	p. 4
Registration for the Conference	p. 4
Venue of the Conference	p. 4
Organising Committee	p. 5
Scientific Program	p. 6
Public Lectures - 16 October	p. 8
Academic Session - 20 October	p. 9
Social Activities	p. 11
Tourist Attractions	p. 12
Map City Hall	p. 13

## INTRODUCTION

---

On behalf of the organising committee we would like to warmly welcome you to Brussels and to the 26th Solvay Conference on Chemistry, celebrating the 100th Anniversary of the first Conference.

The conference will start on Monday 17 October at 9:00 am and end on Wednesday 19 October at 17:20 pm. However, on the occasion of this special anniversary, two additional festive events are organized. The first one on Sunday 16 October and the second one on Thursday 20 October (more details on pages 8 and 9).

The conference is hosted by the International Solvay Institutes and will be held at the Hôtel Le Plaza Bruxelles (Bld Adolphe Max 118-126, 1000 Bruxelles), where you will also be staying.

### **The International Solvay Institutes**

Following the legendary 1911 Conseil Solvay on “Radiation and the Quanta” chaired by Nobel Laureate Hendrik Lorentz, the International Solvay Institute for Physics was founded by Ernest Solvay in 1912. The International Solvay Institute for Chemistry was founded a year later, in 1913. The two Institutes merged in 1970 as the “International Solvay Institutes for Physics and Chemistry”, founded by Ernest Solvay.

Professor Marc Henneaux is the Director of the International Solvay Institutes since January 2004 and is responsible for the daily management of the Institutes. Professor Marc Henneaux is assisted in his management tasks by Dominique Bogaerts and Isabelle Van Geet. Mr. Jean-Marie Solvay, the great-great-grandson of Ernest Solvay, is the President of the Solvay Institutes since 2010.

The mission of the International Solvay Institutes is to support and develop curiosity-driven research in physics, chemistry and allied fields with the purpose of “enlarging and deepening the understanding of natural phenomena”.

The central activity of the Institutes is the periodic organization of the celebrated Solvay Conferences on Physics and on Chemistry. This support to fundamental science is complemented by the organization of open workshops on specific selected topics, international chairs, colloquia and an international doctoral school.

In addition to these activities, the International Solvay Institutes promote the popularization of science through the organization of the annual “Solvay public Lectures” devoted to today’s big scientific challenges.

## AT A GLANCE

---

### SUNDAY 16 OCTOBER

13:40 Public Lectures at 15:00 (bus pick up from the hotel at 13:40)  
20:00 Walking dinner at the Plaza Hotel (Esterel Room)

### MONDAY 17 OCTOBER

08:15 - 09:00 Registration (in the lobby of the conference Hotel)  
09:00 - 09:15 Welcome addresses  
09:15 - 09:30 Historical Background  
09:30 - 10:30 Session 1  
10:30 - 11:00 Coffee break  
11:00 - 12:30 Session 1 continues  
12:30 - 14:00 Lunch  
14:00 - 15:00 Session 2  
15:00 - 15:30 Coffee break  
15:30 - 17:00 Session 2 continues  
18:30 Reception at the City Hall (Meeting in the lobby at 18:10)

### TUESDAY 18 OCTOBER

09:00 - 10:10 Session 3  
10:10 - 10:40 Coffee break  
10:40 - 12:10 Session 3 continues  
12:10 - 12:25 Group Photo  
12:25 - 14:00 Lunch  
14:00 - 15:20 Session 4  
15:20 - 15:50 Coffee break  
15:50 - 17:20 Session 4 continues  
19:30 Banquet at the Plaza Hotel

### WEDNESDAY 19 OCTOBER

09:00 - 10:10 Session 5  
10:10 - 10:40 Coffee break  
10:40 - 12:10 Session 5 continues  
12:10 - 14:00 Lunch  
14:00 - 15:20 Session 6  
15:20 - 15:50 Coffee break  
15:50 - 17:20 Session 6 continues  
18:45 Reception at the Solvay's at 19:30  
(Meeting in the hotel lobby - Bus pick up at 18:45)

### THURSDAY 20 OCTOBER 2022 - ACADEMIC SESSION

13:30 - 18:25 Academic session at the Plaza Hotel

Please check our webpage to view the articles:

[http://www.solvayinstitutes.be/html/26thsolvay\\_conf\\_chemistry.html](http://www.solvayinstitutes.be/html/26thsolvay_conf_chemistry.html)

### Arrival at the airport

We will organize your transfer from Brussels airport to the hotel. A taxi driver will be waiting for you in the arrival hall (after reclaiming your luggage and after custom controls). He will be waiting in front of the Java Coffee Bar (to your right in the arrival hall) displaying a board with your name. He will take you to the Hôtel Le Plaza Bruxelles (Boulevard Adolphe Max 118-126, 1000 Bruxelles).

\*The taxi (Company Direct Way) has already been paid by the Solvay Institutes.

### Arrival at the train station (GARE DU MIDI)

We will organize your transfer from Brussels train Station to the Hôtel Le Plaza Bruxelles. A taxi driver will be waiting for you in front of the 'Zebra' statue at the Prêt Café, displaying a board with your name on it. He will take you to the Hôtel Le Plaza Bruxelles.

\*The taxi (Company Direct Way) has already been paid by the Solvay Institutes.

In case of any problems please phone the taxi Company  
Direct Way on +32 2772 00 00

### Arrival by car

When arriving in front of the hotel, please stop your car at the entrance and hand your car keys to the doorman, he will park your car in the hotel parking for you.

### Your departure from Brussels

A taxi, already paid by the Solvay Institutes, will pick you up at the Hôtel Le Plaza Bruxelles and drive you to the airport or to the train station. A 'pick-up' list with your name and pick-up time will be sent to you in due course.

In case of any questions please contact us:

Isabelle Van Geet: +32 2 650 54 23

Mobile: +32 (0) 486 066 152

Dominique Bogaerts: + 32 2 650 55 42

## HOTEL AND CONFERENCE VENUE

---

A room has been booked for you at the Hôtel Le Plaza Bruxelles under your name.

the Hôtel Le Plaza Bruxelles (<https://www.leplaza-brussels.be>)  
Bld Adolphe Max 118-126  
1000 Bruxelles  
Tel: +32 2 278 01 00  
Check in: 3:00 p.m.  
Check out: 12:00 p.m.

Wifi Internet access will be available during your stay everywhere in the hotel. Your hotel room and the Internet access are directly paid by the Solvay Institutes but we do not cover any extra expenses (room service etc).

For accompanying persons; we cover the cost of the double room only (breakfast included).

**IMPORTANT:** For participants leaving on Wednesday 19 October, please note that the check out is at 12:00 p.m. We therefore ask you to check out the room before the afternoon session. A luggage room is available near the hotel reception.

### Registration for the Conference

Dominique and Isabelle will be in the lobby of the Hôtel Le Plaza from 8:15 a.m. on Monday 17 October for the registration and the administrative formalities.

### Venue of the Conference

The whole event takes place at the Hôtel Le Plaza, where all the participants will also stay. The conference room is the **Adolphe Max room**.

## ORGANISING COMMITTEE

---



Kurt Wüthrich  
Nobel Laureate 2002  
Scripps Research, La Jolla, CA, USA  
& ETH Zürich, Switzerland  
Chair of the International  
Solvay Institutes's Scientific  
Committee for Chemistry

Chair of the Conference



Ben Feringa  
Nobel Laureate 2016  
Member of the Scientific  
Committee for Chemistry of the  
International Solvay Institutes

Co-Chair of the Conference



Anne De Wit  
Université Libre de Bruxelles  
Secretary of the Scientific  
Committee for Chemistry of the  
International Solvay Institutes

Editor of the Proceedings



Laurence Rongy  
Université Libre de Bruxelles

Co-Editor of the Proceedings



Marc Henneaux  
Director of the International  
Solvay Institutes



Jean-Marie Solvay  
President of the International  
Solvay Institutes



Dominique Bogaerts  
Conference Coordinator of  
the International Solvay Institutes



Isabelle Van Geet  
Conference Coordinator of  
the International Solvay Institutes

## SCIENTIFIC PROGRAM

---

### SUNDAY 16 OCTOBER

20:00 Walking dinner at the Plaza Hotel

### MONDAY 17 OCTOBER

09:00 – 09:15 Welcome addresses by Marc Henneaux, Director of the Solvay Institutes and by Kurt Wüthrich, Chair of the conference and of the Scientific Committee for Chemistry of the International Solvay Institutes

09:15 – 09:30 Historical Background by Franklin Lambert, Emeritus Professor VUB

#### Session 1 **Catalysis for Sustainable Chemistry - Chair: David MacMillan**

09:30 – 10:30 Introductory statement by David MacMillan  
Statements: Karen I. Goldberg, Rob Knowles, Karthish Manthiram  
Sir Martyn Poliakoff

10:30 – 11:00 Coffee break

11:00 – 12:30 Discussion

12:30 – 14:00 Lunch

#### Session 2 **From Molecules to Dynamic Supramolecular Systems - Chair: Ben Feringa**

14:00 – 15:00 Introductory statement by Ben Feringa  
Statements: Nicolas Giuseppone, Nathalie Katsonis  
Bert Meijer, Andrew Turberfield

15:00 – 15:30 Coffee break

15:30 – 17:00 Discussion

18:30 Reception at the City Hall (Meeting in the lobby at 18:10)

### TUESDAY 18 OCTOBER

#### Session 3 **Reticular Chemistry and New Materials - Chair: Omar M. Yaghi**

09:00 – 10:10 Introductory statement by Omar M. Yaghi  
Statements: Makoto Fujita, Chad Mirkin, Joachim Sauer, Arne Thomas,  
Xiaodong Zou

10:10 – 10:40 Coffee break

10:40 – 12:10 Discussion



## SCIENTIFIC PROGRAM

---

12:10 – 12:25	Group Photo
12:25 – 14:00	Lunch
<b>Session 4</b>	<b>New Chemistry for Renewable Energy - Chair: Dan Nocera</b>
14:00 – 15:20	Introductory statement by Dan Nocera Statements: Dame Clare Grey, Sossina Haile, Matthew Kanan, James Liao, Henry Snaith, Andreas Züttel
15:20 – 15:50	Coffee break
15:50 – 17:20	Discussion
19:30	Banquet at the Plaza Hotel

## WEDNESDAY 19 OCTOBER

<b>Session 5</b>	<b>Directed Protein Evolution for Green Chemistry - Chair: Sabine Flitsch</b>
09:00 – 10:10	Introductory statement by Sabine Flitsch Statements: Don Hilvert, Stefan Lutz, Alison Narayan, Silvia Osuna Nicholas Turner
10:10 – 10:40	Coffee break
10:40 – 12:10	Discussion
12:10 – 14:00	Lunch
<b>Session 6</b>	<b>RNA Chemistry to Explore our Origins and Fight Viral Pandemics Chair: Gerald Joyce</b>
14:00 – 15:20	Introductory statement by Gerald Joyce Statements: Andrew Fire, Claudia Höbartner, Karla Kirkegaard, Peter Palese, John Sutherland, Jack Szostak
5:20 – 15:50	Coffee break
15:50 – 17:20	Discussion
18:45	Reception at the Solvay's at 19:30 (Meeting in the hotel lobby - Bus pick up at 18:45).

### Sunday 16 October at 15:00

The Solvay Public Lectures will take place at Flagey Studio 4, Place Sainte-Croix, 1050 Brussels.

**!!!We will organise transport from the Hotel Le Plaza to the venue of the Public Lectures. The transport will leave at 13:40. !!Please let us know if you wish to attend this event so that we can communicate the exact number of passengers to the transport agency.**

Popularizing science is one of the important missions of the International Solvay Institutes. Following a tradition initiated a few years ago, the International Solvay Institutes will organize their 20th annual Public Lectures.

### PROGRAMME

13:40	Transport from the Hotel le Plaza to the venue
Moderator	Prof. Alexander Sevrin (VUB & International Solvay Institutes)
15:00 - 15:10	Opening by Prof. Marc Henneaux (ULB & International Solvay Institutes)
15:10 - 15:35	Solvay Awards ceremony: during this short Award Ceremony, brilliant students in physics, chemistry and engineering at the ULB and the VUB who had been distinguished for their work will be handed out an award from Ilham Kadri, CEO of the Solvay Company.
15:35 - 16:20	Talk by Prof. Omar Yaghi (Berkeley, USA) Title: Water Harvesting from Air Anytime Anywhere
16:20 - 16:30	Questions
16:30 - 17:15	Talk by Prof. Paul Nurse (Crick Institute, UK) Title: "What is Life?"
17:15 - 17:25	Questions
17:25 - 17:30	Closing by Prof. Marc Henneaux (ULB & International Solvay Institutes)
17:30	Drink
18:15	Transport back to the hotel Le Plaza

### Centenary celebration Academic Session - Chemistry and the future of society

The first Solvay conference on Chemistry took place in 1922. We will celebrate this centenary with a special half-day session in the afternoon of **Thursday 20th of October**. This session will be open to the public and devoted to the importance of fundamental research in chemistry for the future of society.

#### PROGRAMME

Moderator	Gert Desmet, Deputy-director for chemistry of the International Institutes
13:30 – 13:55	Opening session Marc Henneaux, Director of the International Solvay Institutes Alexander De Croo, Prime Minister (Belgium) Thomas Dermine, State Secretary in charge of Science Policy (Belgium) Yves Rouyet, President of the Belgian French-speaking and German-speaking Commission for UNESCO
13:55 – 14:35	Panel 1: From fundamental chemistry to sustainable development
14:35 – 15:15	Panel 2: From fundamental chemistry to human health
15:15	ARRIVAL OF HIS MAJESTY THE KING
15:20 – 15:50	Why basic research? Karen Goldberg: Chemistry at the center of solutions to mitigate climate change Jean-Marie Lehn: From the laboratory to the bedside; from basic research to medical applications Sossina Haile: Nurturing and Harnessing Global Talent in an Equitable World
15:50 – 16:30	Coffee Break
16:30 – 17:10	Panel 3: Economic impact and funding of fundamental research
17:10 – 18:00	Panel 4: Future and social responsibility of chemistry: the view of the young generation
18:00 – 18:30	Closing session Ilham Kadri, CEO of the Solvay Company Jean-Marie Solvay, President of the International Solvay Institutes
19:00	Gala dinner

## Academic Session - Chemistry and the future of society COMPOSITION OF THE PANELS

### **PANEL 1: From fundamental chemistry to sustainable development**

Chair: Ben Feringa (2016 chemistry Nobel Laureate, Groningen)

Panel members: Nicolas Cudré-Mauroux (Solvay General Manager for Research & Innovation), Karen Goldberg (Chemistry department, University of Pennsylvania, USA), Bertrand Piccard (Solar Impulse Foundation Chairman), Omar M. Yaghi (Laureate of the 2018 Wolf Prize, University of California at Berkeley, USA)

### **PANEL 2: From fundamental chemistry to human health**

Chair: Gunnar von Heijne (Former chair of the Nobel chemistry committee)

Panel members: Andrew Fire (2006 Physiology or Medicine Nobel Laureate, Stanford, USA), Stefan Lutz (Senior VP Research, Codexis Company), Jean Stéphenne (Chairman of the Board of Directors of CureVac and of Nanocyl), Jack Szostak (2009 Physiology or Medicine Nobel Laureate, Harvard, USA)

### **PANEL 3: Economic impact and funding of fundamental research**

Chair: Gerald Joyce (Prof. at Salk I., director at the Novartis Research Foundation)

Panel members: Philippe Aghion (Professor of economy, Collège de France and London Business School), Stefan Hell (2014 chemistry Nobel Laureate, Göttingen, Germany), André Hoffmann (board of directors, Hoffmann-La Roche, former vice-president of WWF), Maria Leptin (ERC president), Kurt Wüthrich (2002 chemistry Nobel Laureate, Zurich and La Jolla)

### **PANEL 4: Future and social responsibility of chemistry: the view of the young generation**

Chair: Bert Meijer (Chemistry Department, Eindhoven University of Technology)

Panel members: Alena Budinska (PhD Student in Chemistry, ETH Zurich, Switzerland), Thomas Ebbesen (Strasbourg Institute for Advanced Study, France), Yamuna Krishnan (Chemistry Department, University of Chicago, USA), Pablo Serna Gallén (PhD Student in Chemistry, Castellon, Spain), Hennie Valkenier (“Chercheuse Qualifiée F.R.S.-FNRS”, ULB, Belgium)

## SOCIAL ACTIVITIES

---

### **Sunday 16 October - Walking Dinner**

A walking dinner is scheduled at 8:00 p.m at the Plaza Hotel where you will be staying and where the conference will take place. The dinner will take place in the Esterel room.

### **Monday 17 October - Reception at Brussels City Hall**

A walking dinner is scheduled at 6:30 p.m. at the Brussels City Hall. Isabelle will walk with you to the venue (13 minutes walk)

\*\*Meeting in the lobby of the hotel at 6:10 p.m.\*\* Please see map below.

### **Tuesday 18 October - Group photo**

The group photo is scheduled at 12:20 (before lunch). More information about the picture will be provided at a later stage.

### **Tuesday 18 October - Conference banquet at the Plaza Hotel**

The conference banquet is scheduled at 7:30 p.m. at the Plaza Hotel (Versailles room).

### **Wednesday 19 October - Reception at the Solvays**

A reception is scheduled at 7:30 p.m. at the Solvays' family home. A bus will drive you at the Solvays' and bring you back to the Hotel after the reception.

\*\*Meeting in the lobby of the hotel at 6:45 p.m. \*\*

### **Thursday 20 October - Banquet of the Academic Session**

The academic session banquet is scheduled at 7:00 p.m. at the Plaza Hotel

**PLEASE LET US KNOW IF YOU HAVE ANY SPECIAL DIETARY REQUESTS OR RESTRICTIONS SO THAT WE CAN ACCOMMODATE YOUR NEEDS.**

**THE DRESS CODE FOR ALL THE SOCIAL ACTIVITIES IS SMART CASUAL.**

## TOURIST ATTRACTIONS IN BRUSSELS

---

**Grand Place:** Right in the heart of Brussels Old Town, the city's main square is one of the best preserved in Europe. The most recognisable building on the square is the Hôtel de Ville (City Hall), built in 1402.

**Manneken Pis:** Brussels' best-known landmark is the 61 cm small bronze sculpture, depicting a naked little boy urinating into a fountain's basin.

Address: Rue de l'Etuve, 1000 Brussels

**Palais Royal:** The Royal Palace (Palais Royal) used by the Belgian royal family as an official residence is a must see. Surrounding the palace are an ensemble of cultural buildings boasting neoclassical facades, including the Palais des Académies, home of the Royal Academy of Sciences and the Palais des Beaux-Arts on the west side of the square, designed and built in the 1920s by Victor Horta.

Address: Rue Brederode 16, 1000 Brussels

**Belgian Royal Museum of Fine Arts:** Belgium's Royal Museum of Fine Arts is one of the largest and best art galleries in the world.

Address: Rue de la Régence 3, 1000 Brussels

**Magritte Museum:** The Magritte Museum presents an outstanding collection of works by the Belgian Surrealist artist René Magritte. This rich collection contains over 200 works.

Address: Place royale 1, 1000 Brussels

**Musical Instruments Museum:** The MIM has its quarters in a magnificent Art Nouveau building erected in 1899 and designed by architect Paul Saintenoy. The MIM exhibits some 900 instruments in a high-quality showcase that will delight all visitors.

Address: Rue Montagne de la Cour 2, 1000 Brussels

**Belgian Comic Strip Center:** This 1906 building, also designed by Victor Horta, is home to the wonderful Comic Strip Center, devoted to the history of cartoons and comic strips in the country that gave the world The Smurfs and Tintin.

Address: 20 Rue des Sables, 1000 Brussels

**Atomium:** Along with Manneken Pis, the Atomium is Brussels' best-known landmark, and although it is a bit of a journey by tram to get out here, the 102-meter-high steel and aluminium structure, designed by the architect André Waterkeyn for the 1958 Brussels World Exhibition, is the city's most surreal sight.

Address: Eeuwfeestlaan 20, Boulevard du Centenaire, 1020 Brussels

### Walking dinner on Monday 17 October at 6:30 pm

The Brussels City Hall is situated right on the Grand Place of Brussels (13 minutes walk from the Plaza Hotel)

