



ICMSE 2017 27-29 August at the University of Basel Kollegienhaus

Includes information and the program for the ICMSE pre-Conference by and for selected students and postdocs 26 & 27 August, Basel ICMSE 2017 and the NCCR Molecular Systems Engineering would like to thank these supporters:

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ICMSE 2017 is organized by









NCCR MOLECULAR SYSTEMS ENGINEERING

The NCCR Molecular Systems Engineering welcomes you to the ICMSE 2017. Molecular Systems Engineering is a National Centre of Competence in Research (NCCR) funded by the Swiss National Science Foundation (SNSF) and headed by the University of Basel and ETH Zürich. The NCCR Molecular Systems Engineering combines the disciplines of biology, chemistry, and physics with bioinformatics, engineering and healthcare.

The scientific aim of the NCCR Molecular Systems Engineering is to synthesize, assemble and engineer molecular modules into molecular factories approaching the complexity of a cell. These molecular factories will be used for industrial production or to control cellular systems in health and disease.

To address this challenge, the International Conference on Molecular Systems Engineering (ICMSE 2017) brings together world leaders in the characterization and engineering of complex chemical and biological systems.

We are looking forward to the ICMSE 2017 and welcoming you to Basel.

Thomas R. Ward, Director NCCR

Daniel J. Müller, Co-Director NCCR

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DAY 1: SUNDAY, 27 AUGUST 2017: OPENING

3.30 pm	Registration open until 6.30 pm Bring your registration confirmation for "Speedy Check-in"	Uni Basel, Foyer and ICMSE Office (R. 028)
4.10 pm	Debate, open to the public: Ethical challenges of synthetic biology. Host: Kai Kupferschmidt Guests: Joyce Tait, Renzo Pegoraro, Randall Platt	Uni Basel Hörsaal 118/1st Fl.
6.00 pm	Opening ICMSE 2017 Thomas R. Ward, Director NCCR MSE	Uni Basel, Aula
6.10 pm	Welcome address by the Director of Education, Basel Councilor Conradin Cramer (Regierungsrat Basel-Stadt)	Uni Basel, Aula
6.20 pm	Opening Concert / Premiere: argovia philharmonic "In C" (Terry Riley) and "Sound of Molecules: I. fiddle (with)" (Lukas Huber, Sam Hertig, Viola Vogel, Christian Weidmann, Ralf Stutzki)	Uni Basel, Aula
6.50 pm	Keynote speaker Ben. L. Feringa, Nobel laureate 2016	Uni Basel, Aula
All Day	ICMSE 2017 Poster Session	Uni Basel, 1 st Fl. Kollegienhaus
7.35 pm	Apéro	Uni Basel, Foyer/Garden
9.00 pm	End of Day 1	Delegates return to hotel

DAY 2: MONDAY, 28 AUGUST 2017: MOLECULAR MODULES

Chair: Dimitrios Fotiadis, NCCR MSE

All Day	ICMSE 2017 Poster Session	Uni Basel, 1st Fl. Kollegienhaus
8.00 am	Registration open Bring your registration confirmation for "Speedy Check-in"	Uni Basel, Foyer and ICMSE Office (R. 028)
8.30 am	Plenary speaker Frances H. Arnold	Uni Basel, Aula

9.15 am	Sylvestre Bonnet, Thierry Tron, Johannes Haerle	Uni Basel, Aula
10.10 am	Coffee	Uni Basel, Foyer and/or Garden
10.40 am	Tom de Greef, Nicolas Winssinger, Jens Krömer, Heike Boehm	Uni Basel, Aula
11.50 am	Invited speakers Bert Meijer, Andreas Plueckthun	Uni Basel, Aula
12.50 pm	Lunch	Uni Basel, Foyer and/or Garden

MOLECULAR SYSTEMS

Chair: Sven Panke, NCCR MSE

Invited speakers	Uni Basel, Aula
Lee Cronin, Joachim Spatz, Wilhelm T.S. Huck	
Transfer from Uni Basel to Roche Tower	Bus (BVB)
See page 8	or by foot
Take your seats at Roche Auditorium	Roche
Your ICMSE Badge guarantees access, see page 8	Auditorium, 2 nd Fl.
Severin Schwan, CEO Roche Group	Roche
John C. Reed, Head of Roche pRed	Auditorium, 2 nd Fl.
Daniel J. Müller, Co-Director NCCR MSE	
Roche Innovation Lecture: Keynote	Roche
Stefan W. Hell, Nobel laureate 2014	Auditorium, 2 nd Fl.
Apéro & Poster Session	Roche
7.poto & 1 octor octor.	Foyer 2 nd Fl.
	•
Dinner Restaurant Avenue	Roche
	Restaurant 3 rd Fl
End of Day 2	Delegates return to hotel
	Lee Cronin, Joachim Spatz, Wilhelm T.S. Huck Transfer from Uni Basel to Roche Tower See page 8 Take your seats at Roche Auditorium Your ICMSE Badge guarantees access, see page 8 Severin Schwan, CEO Roche Group John C. Reed, Head of Roche pRed Daniel J. Müller, Co-Director NCCR MSE Roche Innovation Lecture: Keynote Stefan W. Hell, Nobel laureate 2014 Apéro & Poster Session Dinner Restaurant Avenue

DAY 3: TUESDAY, 29 AUGUST 2017: MOLECULAR FACTORIES

Chairs: Wolfgang Meier & Cornelia G. Palivan, NCCR MSE

ICMSE 2017 Poster Session	Uni Basel, 1 st Fl.
	Kollegienhaus
Plenary Speaker	Uni Basel, Aula
Hagan Bayley	
Peter Walde, Rainer Haag, Gesine Gunkel-Grabole	Uni Basel, Aula
Coffee	Uni Basel, Foyer/Garden
Katharina Maniura, Nobutaka Fujieda,	Uni Basel, Aula
Evan Spruijt, Christof Klöpper	
Invited speakers	Uni Basel, Aula
David Tirrell, Erik Winfree	
Lunch	Uni Basel, Foyer/Garden
	Plenary Speaker Hagan Bayley Peter Walde, Rainer Haag, Gesine Gunkel-Grabole Coffee Katharina Maniura, Nobutaka Fujieda, Evan Spruijt, Christof Klöpper Invited speakers David Tirrell, Erik Winfree

CELLULAR SYSTEMS

Chair: Yaakov (Kobi) Benenson, NCCR MSE

2.20 pm	Invited speakers	Uni Basel, Aula
	Martin Fussenegger, Ivan Martin	
3.20 pm	Rongcong Luo, Wolfram Volkwein, Sabine Schneider	Uni Basel, Aula
4.15 pm	Coffee	Uni Basel, Foyer/Garden
4.45 pm	Friedhelm Serwane, Qinliyang Yu,	Uni Basel, Aula
	Koji Oohora, Bartosz Matysiak	
5.55 pm	Plenary speaker	Uni Basel, Aula
	Krzysztof Palczewski	
6.40 pm	ICMSE Poster Prize 2017, conclusions and farewell	Uni Basel, Aula
·	Thomas R. Ward, Director NCCR MSE	
7.00 pm	End of Conference	Delegates return to
•		hotel/departure



ICMSE OPENING & KEYNOTE

Sunday, 27 August 2017, University of Basel, Petersplatz 1, Kollegienhaus

4.10 - 5.40 pm: Public Debate:

"Ethical challenges of synthetic biology" Hörsaal 118, 1st Fl. open to the public

6 pm: Opening of the ICMSE 2017

Aula, Kollegienhaus

Welcome address: Councilor Conradin Cramer and Thomas R. Ward. Director NCCR MSE

Opening Concert / Premiere: argovia philharmonic

"In C", composer: Terry Riley

"Sound of Molecules: I. fiddle (with)"

An Art of Molecule project for video, string orchestra, rhodes piano and playback.
Composition: Lukas Huber, Visualization:
Sam Hertig. Artistic Advisor: Christian
Weidmann. Scientific Advisor: Viola Vogel.
Idea and Concept: Ralf Stutzki.

Keynote: Ben L. Feringa, University of Groningen

Apéro, Side Effects, Poster Session (ends 9 pm) "Side Effects" – an Art of Molecule exhibition in cooperation with Zürcher Hochschule der Künste (Zurich University of the Arts).

ICMSE KEYNOTE & CONFERENCE DINNER

Monday, 28 August 2017, 5 pm, Roche Tower (Bau 1), Grenzacherstrasse 124, Basel Venue: Auditorium and Foyer on floor 2 of building 1

5 pm: Welcome address by **Severin Schwan**, CEO Roche Group, **John C. Reed**, Head of Roche pRED and **Daniel Müller**, Co-Director NCCR MSE

5.20 pm: Roche Innovation Lecture with Keynote by **Stefan W. Hell**, Max Planck Institute for Biophysical Chemistry, Göttingen

6.10 pm: Apéro offered by Roche

In parallel: Don't miss the session with selected posters by PhD-students and postdocs, presented to Roche scientists, executives and HR recruiters.

7.30 pm: Dinner in restaurant **Avenue** on floor 3. For registered participants only.

Bring your ICMSE badge (needed for keynote and dinner). Roche security will check the badge in the lobby of the Roche-Tower and deny access to people without it. No smoking inside the building.

The transfer from the University of Basel to Roche starts at 3.40 pm: Either by foot (lead by Daniel Müller), or with public transport (Bus, lead by Thomas Ward). Be sure to arrive at the auditorium no later than 4.45 pm to reserve your seat.

Bus No. 34 leaves the stop "University" at 3.56 pm (thereafter every 7 Min.). It takes 7 Min. to ride to the station "Rosengartenweg". Follow the main road (Grenzacherstrasse) by foot on the boardwalk on the right for about 300m to the Roche Tower.

Tickets: Most hotels in Basel include a tourist card for free use of busses. If you need a ticket: Press fare button "1 Zone" for CHF 3.80 (you need change).

SPEAKERS ICMSE 2017

For details see program on pages 4-6



Stefan W. HellMax Planck Institute for Biophysical Chemistry, Göttingen,
Nobel Prize in Chemistry 2014

Ben L. Feringa University of Groningen, Nobel Prize in Chemistry 2016



Frances H. Arnold
California Institute of Technology, Pasadena

Lee Cronin University of Glasgow





Hagan Bayley University of Oxford

David Tirrell
California Institute of Technology, Pasadena



Bert MeijerEindhoven University of Technology

Andreas Plueckthun University of Zurich





Joachim SpatzMax Planck Institute for Medical Research, Heidelberg

Martin Fussenegger ETH Zurich, D-BSSE



Ivan Martin University Hospital Basel

Wilhelm T.S. Huck Radboud University Nijmegen



Erik Winfree
California Institute of Technology, Pasadena



Krzysztof Palczewski Case Western Reserve University, Cleveland

UNIVERSITY OF BASEL, KOLLEGIENHAUS, PETERSPLATZ 1

ICMSE 2017: 27–29 August 2017 > Program on pages 4–6 Pre-Conference: 26 & 27 August 2017 > Program on pages 16–19

The remarkable main building (Kollegienhaus) of the University of Basel features a large auditorium for the conference (Aula), a wonderful garden and a large foyer for socializing.

Location

University of Basel, Kollegienhaus, Petersplatz 1, 4051 Basel Most events will be held in the Aula, while the poster session (see pages 14/15 for details) will be held in the hallway upstairs, on the 1st Floor. For a map please see our website www.nccr-mse.ch > Events > ICMSE, or simply enter "Petersplatz 1, 4051 Basel" in Google Maps.

Conference check-in

Room 028 (Kollegienhaus) and Foyer
To receive your badge, the conference bag
and your USB Stick (featuring abstracts etc.),
please present you printed registration
confirmation (with bar code) for speedy
check-in! If you have not paid yet, Visa and
Master credit cards will be accepted.

Opening times check-in

For participants of the pre-Conference: Saturday, 26 August, 8 – 10 am.

For participants of the ICMSE 2017: Sunday, 27 August: 3.30 – 6.30 pm Monday, 28 August: 8 – 9 am Other times: Please go to the ICMSE office

The "Roche Innovation Lecture" with Stefan W. Hell and the Conference Dinner will be at the Roche Tower (Bau 1), Grenzacherstrasse 124, in Basel (both on Monday, 27 August, starting at 5 pm). Details for your transfer etc. on page 8.

Meals, Coffee, Apéro

Please see the program on pages 4–6 (pre-Conference: pages 16–19) for details. Water and coffee is available at the desk next to the Aula throughout the conference

days. Please bring only water into the Aula (no other drinks or food).
Any questions? Please consult the ICMSE conference office (details below).

ICMSE conference office

Room 028 (Kollegienhaus)
The ICMSE conference office is opposite of the Aula, next to the entrance, and open for your needs during registration times (see left), and during coffee- and lunch-breaks.

Cloakroom

A guarded cloakroom to deposit coats, bags etc. is available before you enter the Aula, on the right, during conference hours. Please make sure to pick up your deposits after each conference day ends. All other areas are not guarded.

Workspace for speakers and participants

Room 035 (Kollegienhaus)

Those looking for workspace find power, desks and chairs, and Wifi in Room 035 (in the hallway, after the indoor dining-room). Please note: The room is open during conference hours, except on 27 August between 1–10 pm (closed).

If you need an adapter-plug: Interdiscount (Marktplatz, Basel, about 10 Min. walk from ICMSE 2017) offers a variety.

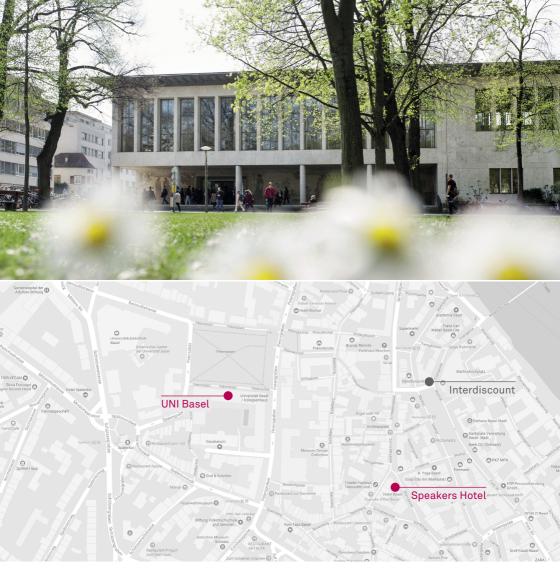
Wifi

There is conference wifi for the ICMSE 2017 in the Kollegienhaus: Name: icmse-2017

Password: Molecular17

ICMSE 2017 is organized by the NCCR Molecular Systems Engineering.

Congress Agency: Viva Management GmbH, Berne, Switzerland.



The ICMSE 2017 conference and the pre-Conference will be held at the **University of Basel**. In addition to the map above, please use the street map provided in your conference bag

Taxis run by meter and can be ordered to your hotel or any other place:

Mini Cabs: 061 777 77 77

Other taxis for example: 061 333 33 33

For **public transport** see www.bvb.ch: Most hotels in Basel include a tourist card for free use of public transport. To buy a ticket at the vending machines (green), you need change:

Airport to the city, and within the city: Press fare button "1 Zone" for CHF 3.80

For up to 4 stations: Press "Kurzstrecke" for CHF 2.30

BASEL AREA. SWISS

BaselArea.swiss is the office for the promotion of innovation and inward investment of the cantons of Basel-Stadt, Basel-Landschaft and Jura. We foster innovation and accelerate business in Switzerland's most dynamic economic region. Our mission is to promote the strengths of the region as a centre for business and to support both Swiss and foreign entrepreneurs and companies in the implementation of their projects in the region. We are in touch with a network of decision makers, innovators and experts and thus provide our clients with knowhow and support. Through our information platform and Innovation Reports we contribute to the sustainable positioning of the region as a leading centre for innovation and business.

CONNECTING INNOVATORS

We connect ideas, companies and entrepreneurs on all matters of technology, R&D and innovation and organise over 80 specialist events each year – from workshops, conferences and seminars to informal discussions. At our events, entrepreneurs, innovators and experts come together to exchange ideas and share knowledge. We focus on five core areas: life sciences, medtech, information and communications technology, production technology and micro; nano & materials. BaselArea. swiss also offers personalised consultations on all of these topics.

SUPPORTING ENTREPRENEURS

BaselArea.swiss helps entrepreneurs – especially founders of new companies, startups and growing SMEs predominantly concerned with technology and innovation – in the operational deployment of their projects. We enlist the aid of specialists and acts as an intermediary to potential investors. A varied seminar and workshop programme complements our range of services. Our business start-up course is aimed at anyone wishing to set up a company; more advanced courses and individual consultations are available to startups and entrepreneurs who have specific innovation and technology projects.

Please visit our website for more information www.baselarea.swiss

Swiss Industry Science Fund (SISF)









Mission: The Swiss Industry Science Fund (SISF) promotes scientific excellence in research and education in Switzerland, within the scope of its member companies.

Organization: The SISF is an unregistered partnership of the following member companies (listed in alphabetic order): BASF, Novartis, Roche, Syngenta. Each member is represented through two delegates. They meet quarterly to discuss and decide on applications for support.

The SISF provides financial support for selected initiatives meeting the following criteria:

- Selected scientific conferences, organizations, awards and special events in basic and applied research, for education and further development of students and scientists.
- Scientific areas covered include biology, chemistry and associated disciplines, with a focus on pharmaceutical R&D, life sciences and material sciences.
- Events must take place in Switzerland or nearby regions, and call for a substantial and active participation of Swiss-based scientists.
- Preference will be given to events open to broad, rather than local participation.





POSTER SESSION

The ICMSE poster session will be held in the Kollegienhaus hallway (1st Floor) from 26 through 29 August.

ICMSE 2017 pre-Conference by and for PhD-students and postdocs

During the pre-Conference, more than 30 posters and more than 20 talks will be presented. The selections of posters and talks was based on abstracts submitted by 30 June 2017. The decision has been made by the organizing committee of the pre-Conference.

ICMSE 2017 – the International Conference on Molecular Systems Engineering

With the start of the main conference ICMSE 2017 on Sunday, 27 August 2017, some 60 additional posters selected by the ICSME Scientific Committee will be on display.

Please note

Two lists with all accepted posters are included in your conference bag, one with the posters for the pre-Conference, and one with all posters for the ICMSE 2017.

All poster abstracts, listed alphabetically, are included on the USB stick you receive upon check-in. The listings are interactive: simply click on the name of the person that submitted the poster and you will be directed to the respective abstract.

All abstracts submitted for talks are also listed on the USB Stick.

All posters will remain on display until 29 August 2017, the end of the main conference. For the poster prizes, please see next page.

POSTER AND SCIENCE SLAM PRIZES

ICMSE 2017 pre-Conference

The pre-Conference is organized by and for PhD students/postdocs of the NCCR Molecular Systems Engineering, the Research Training Group GRK2062 "Molecular Principles of Synthetic Biology" (Ludwig-Maximilians-Universität Munich) and FMS Research Center (Research Center for Functional Molecular Systems; University of Groningen, Radboud University Nijmegen, Eindhoven University of Technology).

Prizes

The pre-Conference scientific committee will award three poster prizes and one science slam prize. The poster prize winners will be selected by a jury of two professors and two members of organizing committee. The decision is final. The prizes are sponsored by the Radboud Universiteit Nijmegen and by MDPI AG, Multidisciplinary Digital Publishing Institute.

Poster prizes:

1st 400 CHF, 2nd 300 CHF and 3rd 200 CHF, each with a certificate

Award for the best talk: 500 CHF

Award for the best science slam performance: 300 CHF

Research Center for Functional Molecular Systems Gravitation Program - The Netherlands



ICMSE 2017

Voting and Prizes

All posters submitted for the main ICMSE 2017 conference are eligible. The jury for the poster prize are the speakers of the main conference. The decision of the jury is final. Thomas R. Ward will award the ICMSE 2017 Poster Prizes at the end of the conference on Tuesday, 29 August 2017, around 7 pm.

These prizes are sponsored. In addition, all winners will receive a certificate provided by our sponsors:

From Molecular Systems Design & Engineering, Royal Society of Chemistry: Free online subscription to MSDE for 2018 and a £50 RSC books voucher.

From ChemComm, Royal Society of Chemistry: Free online subscription to ChemComm for a year and a £50 RSC books voucher.

From Wiley: €200 Wiley book voucher and free online subscription to Advanced Healthcare Materials for a year.







ICMSE PRE-CONFERENCE FOR PHD-STUDENTS AND POSTDOCS

SPFAKERS



Benjamin Davis University of Oxford (UK)

Vincent Noireaux University of Minnesota (USA)





Roy Bar-Ziv Weizmann Institute of Science (Israel)

Ned Budisa Berlin Institute of Technology / TU Berlin

Valda Vinson Editor of "Science" / AAAS

Martin Ostermaier InterAx Biotech AG

Ralf Dümpelmann BaselArea.swiss

PROGRAM FOR THE PRE-CONFERENCE: 26 & 27 AUGUST 2017

DAY 1: SATURDAY, 26 AUGUST 2017: FUNCTIONAL MOLECULAR SYSTEMS (THE NETHERLANDS)

Chairs: Dowine de Bruijn, Michael Lerch

8.00 am	Registration open until 10 am Bring your registration confirmation for "Speedy Check-in"	Uni Basel, Foyer and ICMSE Office (R. 028)
All Day	Posters on Display	Uni Basel, 1st Floor/Hall
9.00 am	Opening: Daniel Müller, Co-Director NCCR MSE	Uni Basel, Aula
9.10 am	Keynote Speaker: Benjamin Davis	Uni Basel, Aula
9.50 am	Olga Goor Research cluster "Functional Molecular Systems"	Uni Basel, Aula
10.10 am	Coffee	Uni Basel, Foyer/Garden
10.50 am	Mykhailo Vybornyi, Pim de Vink, Ruben Maaskant, Oliver Maguire	Uni Basel, Aula
12.10 pm	Lunch	Uni Basel, Aula



MOLECULAR PRINCIPLES OF SYNTHETIC BIOLOGY (GERMANY)

Chairs: Michael Heymann, Tobias Härtel

1.50 pm	Keynote Speaker	Uni Basel, Aula
	Vincent Noireaux	
2.30 pm	Tobias Härtel	Uni Basel, Aula
	GRK2062 "Molecular Principles of Synthetic Biology"	
2.50 pm	Coffee	Uni Basel, Foyer/Garden
3.30 pm	Matthäus Schwarz-Schilling, Mona Dotzler,	Uni Basel, Aula
	Fridtjof Brauns, Christopher Scheidler	
4.50 pm	Apéro + Poster Session	Uni Basel, 1st Floor/Hall
7.00 pm	Break	Check-in at Hotel
8.00 pm	Science Slam + Party	Uni Basel, Foyer/Garden
0.00 am	End of Day 1	Go to pubs

DAY 2: SUNDAY, 27 AUGUST 2017: MOLECULAR SYSTEMS ENGINEERING (SWITZERLAND)

Chairs: Tillmann Heinisch, Gotthold Fläschner, Jens Gaitzsch, Anja Car

All Day	Posters on Display	Uni Basel, 1 st Floor/Hall
9.00 am	Invited Speakers Valda Vinson, Ned Budisa	Uni Basel, Aula
10.00 am	Coffee	Uni Basel, Foyer/Garden
10.30 am	Keynote Speaker Roy Bar-Ziv	Uni Basel, Aula
11.10 am	Aleksander Benjak Research Cluster "Molecular Systems Engineering"	Uni Basel, Aula
11.30 am	Lunch	Uni Basel, Foyer/Garden
1.00 pm	Anna-Bea Bornhof, Qi Zhang, Simone Grendelmeier, Tomaz Einfalt	Uni Basel, Hörsaal 102/1st Fl.
2.20 pm	Coffee	Uni Basel, Foyer/Garden
2.50 pm	Invited Speakers Ralf Dümpelmann, Martin Ostermaier	Uni Basel, Hörsaal 102/1 st Fl.
3.30 pm	Awards ceremony and conclusions Organizing Committee + MDPI	Uni Basel, Hörsaal 102/1 st Fl.
3.50 pm	Farewell Thomas R. Ward, Director NCCR MSE	Uni Basel, Hörsaal 102/1⁵t Fl.
4.00 pm	End of 1st ICMSE pre-Conference	6 pm: ICMSE 2017 begins (Aula)

The ICMSE pre-conference 2017 is organised by and for members of the NCCR Molecular Systems Engineering, the Research Training Group GRK2062 "Molecular Principles of Synthetic Biology" (Ludwig-Maximilians-Universität Munich) and FMS Research Center (Research Center for Functional Molecular Systems; University of Groningen, Radboud University Nijmegen, Eindhoven University of Technology) exclusively.









Thank you for your attendance.

See you again at the 2ND INTERNATIONAL CONFERENCE ON MOLECULAR SYSTEMS ENGINEERING

Save the date now: 25-27 August 2019

More information in due time here: nccr-mse.ch > events > ICMSE

ICMSE 2017 is presented by









