

# Diffusion Fundamentals



Basic Principles of Theory, Experiment and Application



*Diffusive Spreading in Nature,  
Technology and Society*

## Programme

August 23<sup>rd</sup> to 26<sup>th</sup>, 2015 – Dresden, Germany

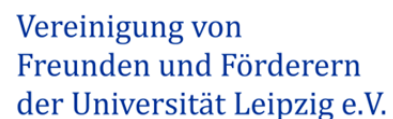
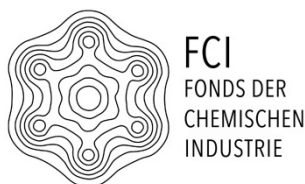
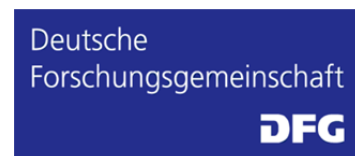


**TECHNISCHE  
UNIVERSITÄT  
DRESDEN**



**Sächsische Akademie  
der Wissenschaften  
zu Leipzig**

We gratefully acknowledge support by:



### Dear Participants:

Welcome to the *Diffusion Fundamentals VI* International Conference!

We hope you will enjoy this 6<sup>th</sup> event in a conference series dedicated to a phenomenon, referred to as diffusion or spreading, which is found essentially everywhere in nature, technology and society.

It all started with the celebration of the 150<sup>th</sup> anniversary of Adolf Fick's and of the 100<sup>th</sup> anniversary of Albert Einstein's groundbreaking papers on diffusion in 2005 in Leipzig, Germany, the very place where – in the "Annalen der Physik und Chemie" and the "Annalen der Physik" – these papers appeared. It has been the intention, even from this very first event, to refer to diffusion and spreading in its broadest possible sense. The subsequent meetings, organized in L'Aquila, Italy (2007), Athens, Greece (2009), Troy, NY, USA (2011) and Leipzig (2013) again, followed this tradition.

However, the conditions for meeting this aim have never been better than now, in 2015, when the Diffusion Fundamentals conference series is being organized under the auspices of the Saxon Academy of Sciences in Leipzig. As a member of the German Union of Academies of Sciences, within the three federal states (Bundesländer) Saxony, Saxony-Anhalt and Thuringia, its classes comprise Humanities, Natural Sciences and Engineering and, thus, the whole spectrum of disciplines covered in our conference series.

Bringing together scientists from disciplines as different as archaeology, ecology, epidemiology, ethnology, linguistics and sociology with biologists, chemists, physicists, mathematicians and engineers, *Diffusion Fundamentals VI* highlights the astonishingly similar patterns of spreading phenomena that are observed in a wide range of different disciplines. Molecules and atoms may thus be found to have features in common with even animals and plants, just as with abstract entities such as innovation, information and languages. We are very happy that leading scientists in the various fields have accepted our invitation to talk to you during this conference. Jointly with the peculiarities of their topic they will also highlight the features in common with other phenomena of spreading or diffusion. Being well aware of the wide range of different expertise within the audience, they will all do their best to address everybody – seeing its diversity as an opportunity to stimulate a rich, interdisciplinary discussion, rather than an obstacle. There will be plenty of time for discussions, during the sessions, in front of the posters as well as during the breaks and social events.

Following our tradition, both the poster abstracts and short versions of the plenary talks will soon be published in a special volume of the *Diffusion-Fundamentals Online Journal*. We are happy to announce that, now under the auspices of the *Saxon Academy of Sciences*, articles in the *Diffusion-Fundamentals Online Journal* will soon be listed in the

most common databases and search catalogues such as Google Scholar, BASE and Worldcat.

The program resulted from the efforts of many people, including all of you, with your poster contributions and the invited talks. We sincerely thank our partners and sponsors for their generous support and greatly appreciate the most efficient collaboration and support by the *Dresden University of Technology* and the *Saxon Academy of Sciences*, as the organizers of this event, and their members engaged in this project. We are particularly thankful that the first Minister for Higher Education, Research and Culture of Saxony after Germany's reunification, *Hans Joachim Meyer*, honorary member of the Saxon Academy of Sciences, has accepted our invitation for the evening lecture at the beginning of our conference. His talk about "*A Global Language or a World of Languages*" nicely reflects the diversity of phenomena which one may have in mind when considering spreading and diffusion.

During your time here, we also hope that you will enjoy the city of *Dresden* and at least a few of its showplaces. In recent years Dresden has evolved as an internationally recognized center for materials research and technology. The presence of 3 Max-Planck-Institutes, 2 Leibniz-Institutes, 11 Fraunhofer-Institutes, a Helmholtz-Center, and the Technical University belonging to Germany's eleven elite "Universities of Excellence", renders the location as a focal point for interdisciplinary cooperation. The welcome address by *Hans Müller-Steinhagen*, Rector of the *Dresden University of Technology*, to our conference is therefore particularly appreciated.

The Elbe River and the gently rolling landscape between Sächsische Schweiz and Meissen determine the natural environment in which Dresden is embedded with its architectural attractiveness, natural beauty and charming atmosphere. The climate is equally beneficial to the development of the arts and to viniculture. At the same time Dresden is a modern city with the flair of the former Saxon residence, simply a place with lifestyle. Dresden is famous for its baroque architecture (e.g. the Zwinger, Frauenkirche), its theaters (e.g. Semperoper), museums, festivals and events. The Conference Dinner on Tuesday evening will take place in the very heart of this impressive scenery which, moreover, you shall have the opportunity to digest also during the free time and the guided walk on Wednesday afternoon.

Overall, we trust that the multidisciplinary character of the meeting and its scientific and social events will stimulate new ideas and random walks to beautiful and unexpected collaborations.

We wish you an interesting and enjoyable conference!

*Armin Bunde, Jürgen Caro, Christian Chmelik, Jörg Kärger, Gero Vogl and Hans Wiesmeth*

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## Opening Lecture

Hans Joachim Meyer, Minister for Higher Education, Research and Culture of Saxony (ret.)

## Invited Speakers

Dirk Brockmann, Berlin  
Frank Cichos, Leipzig  
Marc-Olivier Coppens, London  
Joaquim Fort, Girona  
Albrecht Fritzsche, Erlangen  
Russel Gray, Jena  
Detlef Gronenborn, Mainz  
Shlomo Havlin, Ramat Gan

Anne Kandler, London  
Rainer Klages, London  
Rajamani Krishna, Amsterdam  
Klaus Kroy, Leipzig  
Ingolf Kühn, Halle  
Michael Leitner, Munich  
Carsten Lemmen, Geesthacht  
Philipp Maass, Osnabrück

Hernán Makse, New York  
Christoph Neinhuis, Dresden  
Charles Nicholson, New York  
William S. Price, Sydney  
Martin Schnittler, Greifswald  
Manfred Wendisch, Leipzig  
Søren Wichmann, Leiden

## Conference Chairs

Armin Bunde, University of Giessen  
Jürgen Caro, University of Hanover  
Christian Chmelik, University of Leipzig

Jörg Kärger, University of Leipzig  
Gero Vogl, University of Vienna

## Session Chairs

Cornelia Breitzkopf, Dresden  
Dieter Freude, Leipzig  
Petrik Galvosas, Wellington  
Sabina Hrabetova, New York  
Fabian Jacobs, Bautzen  
Grit Kalies, Dresden

Wilfried Konrad, Dresden  
Alfred Leipertz, Erlangen  
Helmut Mehrer, Münster  
Murray A. Moinester, Tel Aviv  
Douglas M. Ruthven, Orono

Michael J. Saxton, Davis  
Boris B. Straumal, Moscow  
Handan Tezel, Ottawa  
Rustem Valiullin, Leipzig  
Hans Wiesmeth, Dresden

## Local Organizing Committee

Jürgen Caro  
Cornelia Breitzkopf  
Eike Brunner

Grit Kalies  
Stefan Kaskel  
Christoph Neinhuis

Lutz Schiffer  
Hans Wiesmeth

## Diffusion-Fundamentals Advisory Board

Dezső L. Beke, Debrecen  
Stefano Brandani, Edinburgh  
Armin Bunde, Giessen  
Jürgen Caro, Hanover  
Alan Chadwick, Canterbury  
Christian Chmelik, Leipzig  
Frank Cichos, Leipzig  
Marc-Olivier Coppens, London  
Gerhard Ertl, Berlin  
Dieter Freude, Leipzig  
Petrik Galvosas, Wellington

Roger Gläser, Leipzig  
Farida Grinberg, Jülich  
Paul Heitjans, Hanover  
Jörg Kärger, Leipzig  
Yossi Klafter, Tel Aviv  
Klaus Kroy, Leipzig  
Alfred Leipertz, Erlangen  
Andreas Mandelis, Toronto  
Graeme Murch, Callaghan  
Jean Philibert, Paris  
William S. Price, Sydney

Douglas M. Ruthven, Orono  
Michael J. Saxton, Davis  
Gunter Schütz, Jülich  
Boris B. Straumal, Moscow  
Doros Theodorou, Athens  
Rustem Valiullin, Leipzig  
Ilpo Vattulainen, Tampere  
Gero Vogl, Vienna  
George H. Weiss, Bethesda

## Pre-School "*Fundamentals of Diffusion and Spreading*":

The conference is preceded by a pre-school on Sunday, August 23<sup>rd</sup>, introducing into basics of diffusion and spreading.

**Sunday, August 23<sup>rd</sup>, 2015**

### Pre-School "*Fundamentals of Diffusion and Spreading*"

Lectures, part 1: *Diffusion Step by Step*  
12:30 – 14:30 **Armin Bunde** (University of Giessen, Germany),  
**Jörg Kärger** (University of Leipzig, Germany)

14:30 – 15:00 Coffee break

Lectures, part 2: *Diffusion Applications*  
15:00 – 17:00 **Jürgen Caro** (University of Hanover, Germany),  
**Gero Vogl** (University of Vienna, Austria)

## Diffusion Fundamentals VI – Conference Program

The conference will take place at Dresden University of Technology, Chemistry Building (Bergstraße 66, 01069 Dresden, Germany). The lectures will be given in the **lecture theatre CHE S89** on the ground floor. Maps of the surrounding are shown at the end of the program booklet.

The conference office is located in the foyer of the building. Also the welcome party on Sunday, the lunches, poster sessions and coffee breaks take place in the foyer, next door to the lecture hall.

**Sunday, August 23<sup>rd</sup>, 2015**

### Welcome Party and Evening Lecture

16:00 Opening of Registration

17:30 – 18:30 Welcome party with refreshments and finger food, part 1

**Hans Joachim Meyer**  
(Minister for Higher Education, Research and Culture of Saxony (ret.), Germany)  
18:30 – 19:15 Evening lecture: *A global Language or a World of Languages*  
– introduced by **Hans Wiesmeth** (TU Dresden, Vice-President of SAW, Germany) –

19:15 – 20:30 Continuation of welcome party



## Monday, August 24<sup>th</sup>, 2015

### Morning Session

Chairs: **Grit Kalies** (Dresden), **Douglas M. Ruthven** (Orono)

**Hans Müller-Steinhagen** (Rector of TU Dresden, Germany)

09:00 – 09:15 *Opening of Diffusion Fundamentals VI*

– introduced by **Jörg Kärger** (University of Leipzig, Germany) –

09:15 – 09:55 **Rajamani Krishna** (University of Amsterdam, The Netherlands)  
*Uphill Diffusion*

09:55 – 10:35 **Philipp Maass** (University of Osnabrück, Germany)  
*Diffusive Transport in Non-Equilibrium Steady States*

10:35 – 11:05 Coffee break

Chairs: **Handan Tezel** (Ottawa), **Petrik Galvosas** (Wellington)

11:05 – 11:45 **William S. Price** (University of Western Sydney, Australia)  
*NMR Versatility*

Tandem Lecture

11:45 – 12:55 **Klaus Kroy** (University of Leipzig, Germany): *Hot Brownian Motion: Theory*  
**Frank Cichos** (University of Leipzig, Germany): *Hot Brownian Motion: Experiment*

12:55 – 14:30 Lunch break  
(during lunch break: meeting book contributors, room 201)

### Afternoon Session

Chairs: **Gero Vogl** (Vienna), **Fabian Jacobs** (Bautzen)

14:30 – 15:10 **Anne Kandler** (City University London, UK)  
*Analysing Language Shift: The Example of Scottish Gaelic*

15:10 – 15:50 **Russel Gray** (Max Planck Institute for the Science of Human History, Jena, Germany)  
*Expansion of Language Families*

15:50 – 16:20 Coffee break

Chairs: **Murray A. Moinester** (Tel Aviv), **Dieter Freude** (Leipzig)

16:20 – 17:00 **Joaquim Fort** (University of Girona, Spain)  
*The Neolithic Transition: Diffusion of People or Diffusion of Culture?*

Tandem Lecture

17:00 – 18:10 **Detlef Gronenborn** (University of Mainz, Germany) and  
**Carsten Lemmen** (Helmholtz Centre Geesthacht, Germany)  
*The Expansion of Farming as Seen from Archaeology and Related Disciplines*

18:10 – 21:00 Poster session I with beer and finger food  
(optional: continuation meeting book contributors, room 201)



**Tuesday, August 25<sup>th</sup>, 2015**

### Morning Session

Chairs: **Alfred Leipertz** (Erlangen), **Armin Bunde** (Giessen)

09:00 – 09:40 **Dirk Brockmann** (Humboldt University Berlin, Germany)  
*Epidemics Spreading*

09:40 – 10:20 **Shlomo Havlin** (Bar-Ilan University, Israel)  
*Spreading of Failures in the Internet and in Power Grids*

10:20 – 10:50 Coffee break

Chairs: **Sabina Hrabetova** (New York), **Michael J. Saxton** (Davis)

10:50 – 11:30 **Hernán Makse** (City College of New York, USA)  
*A New Class of Superspreader: From Twitter, Cities and the Brain*

11:30 – 12:10 **Charles Nicholson** (NYU Langone Medical Center, USA)  
*Brain Structure Revealed by Diffusive Spread of Molecules*

12:10 – 14:30 Poster Session II with Lunch  
(during lunch break: short meeting Diffusion Fundamentals Advisory Board, room 201)

### Afternoon Session

Chairs: **Helmut Mehrer** (Münster), **Rustem Valiullin** (Leipzig)

14:30 – 15:10 **Michael Leitner** (Technical University Munich, Germany)  
*Dispersal in Plants and Animals: Modelling*

15:10 – 15:50 **Martin Schnittler** (University of Greifswald, Germany)  
*Spore Dispersal in Lower Organisms: From Model Assumptions to Reality*

15:50 – 17:00 Tandem Lecture  
**Christoph Neinhuis** (Technical University of Dresden, Germany)  
**Anita Roth-Nebelsick** (State Museum of Natural History Stuttgart, Germany)  
*Transport Systems in Living Organisms*

Free time for an individual walk through Dresden

19:30 – 23:00 Conference Dinner in the restaurant Pulverturm  
(located in the historical centre of Dresden next to *Frauenkirche*)

## Wednesday, August 26<sup>th</sup>, 2015

### Morning Session

Chairs: **Wilfried Konrad** (Tübingen), **Hans Wiesmeth** (Dresden)

09:00 – 09:40 **Albrecht Fritzsche** (University of Erlangen-Nuremberg, Germany)  
*Spreading Innovations*

09:40 – 10:20 **Manfred Wendisch** (University of Leipzig, Germany)  
*Diffusion Processes in Atmospheric Physics*

10:20 – 10:50 Coffee break

Chairs: **Cornelia Breitkopf** (Dresden), **Boris B. Straumal** (Moscow)

10:50 – 11:30 **Rainer Klages** (Queen Mary University of London, UK)  
*Search for Food of Birds, Fish and Insects*

11:30 – 12:10 **Søren Wichmann** (Leiden University, The Netherlands)  
*Language Migration: Empirical Data and Modelling*

12:10 – 12:25 **Boris Bokstein**  
(National University of Science and Technology MISiS, Moscow, Russia)  
*Short presentation of and invitation to Diffusion Fundamentals VII in Moscow 2017*

12:25 – 13:05 **Marc-Olivier Coppens** (University College London, UK)  
*Nature-Inspired Transport Optimization*

13:05 Final Remarks, Quick Lunch

15:00 Optional: Guided walk through the City of Dresden  
(meeting point: tram stop "Synagoge", reached by lines 3 and 7)

A Springer textbook with the oral conference contributions is scheduled to appear in December 2016. The transparencies presented during the pre-school will be available already during the conference in the [download section of the website](#).

## Poster Presentations

All posters remain on display in the foyer, Monday – Wednesday for continuous viewing. We kindly ask the presenting authors for their presence during the corresponding sessions:

- authors of posters with **odd numbers** during **session I** (Monday, 18:10 – 21:00)
- authors of posters with **even numbers** during **session II** (Tuesday, 12:10 – 14:30)

Poster abstracts may be found online in volume 24 of the *Diffusion-Fundamentals online journal*: [http://diffusion.uni-leipzig.de/contents\\_vol24.php](http://diffusion.uni-leipzig.de/contents_vol24.php)

No.	Title and Authors
1	Mortal creepers searching for a target <i>E. Abad, D. Campos, V. Méndez, S.B. Yuste and K. Lindenberg</i>
2	Reduction of p-Nitrophenol to p-Aminophenol over Supported Monometallic Catalysts as a Model Reaction for Mass-Transfer Investigations <i>M. Al-Najji, M. Goepel, A. Roibu and R. Gläser</i>
3	Adsorption and Desorption Studies of Lysozyme by Thermosensitive Fe <sub>3</sub> O <sub>4</sub> -PNIPAM Nanocomposite via Fluorescence Spectroscopy <i>E. Alveroglu, N. İlker, A. Gökçeören and K. Koç</i>
4	Evaluation of CO <sub>2</sub> diffusion on aluminum based metal organic frameworks <i>D. Angı, A. Güneş Yeresikli, F. Çakıcıoğlu-Özkan</i>
5	Current fluctuations in boundary driven diffusive systems <i>T. Becker, K. Nelissen and B. Cleuren</i>
6	Diffusion at tilt grain boundaries in polycrystalline porous materials <i>J.S. Bhatt and M.-O. Coppens</i>
7	Ultra-slow diffusion in processes with preferential relocations to places visited in the past <i>D. Boyer and I. Pineda</i>
8	Application of Maxwell-Stefan equations to characterize silicalite membranes <i>D. Carter, B. Kruczek and F.H. Tezel</i>
9	On the geometrical description of effective diffusion in confined environments: two-dimensional case <i>G. Chacón-Acosta, A. A. García-Chung and L. Dagdug</i>
10	The effect of crystal diversity of nanoporous materials on mass transfer studies <i>J. Cousin Saint Remi, A. Lauerer, G. Baron, C. Chmelik, J. Denayer and J. Kärger</i>

11	Spread of virus infections <i>V.L. de Rioja, J. Fort and N. Isern</i>
12	Composite fuel cell materials studied by MAS PFG NMR diffusometry and MAS NMR spectroscopy <i>N. Dvoyashkina, D. Freude, C.F. Seidler, M. Wark and J. Haase</i>
13	Study of the self-diffusion coefficient in the water-methanol binary mixture from the hydrogen bonding viewpoint using DOSY NMR <i>E. Fadaei and M. Tafazzoli</i>
14	A 2D system of hard needles: event oriented molecular dynamics <i>M.E. Fouladvand, A. Saiidi and M. Yarifard</i>
15	Water adsorption kinetics and diffusion in dense SAPO-34 layers on porous aluminium fibre structures – macroscopic measurements by a Volumetric Differential Pressure Step Method <i>G. Földner and A. Velte</i>
16	Diffusion of CO <sub>2</sub> in 5Å-zeolites by Frequency Response – Impact of assumed adsorption mechanisms <i>M. Galinsky and C. Bretkopf</i>
17	On the geometrical description of the effective diffusion in confined environments: 3D channels <i>A.A. Garcia-Chung, G. Chacón-Acosta and L. Dagdug</i>
18	Chaotic diffusion in periodic lattices with repulsive potentials <i>S. Gil, J. Solanpää, T. Hämäläinen, E. Räsänen and R. Klages</i>
19	Diffusion in MOFs: The surface barrier phenomenon <i>L. Heinke</i>
20	Dynamic Light Scattering for the Determination of Thermal and Mutual Diffusivities of Liquids with Dissolved Gases in Chemical and Energy Engineering <i>A. Heller, T.M. Koller, M.H. Rausch, A. Leipertz and A.P. Fröba</i>
21	On the asymptotic behavior of distributions of work performed on diffusion particles in time-varying potentials <i>V. Holubec, D. Lips, A. Ryabov, P. Chvosta and P. Maass</i>
22	A model of anomalous extracellular diffusion: source location matters <i>J. Hrabe, F. Xiao, R. Colbourn and S. Hrabetova</i>
23	Diffusive spread of substance through brain extracellular space in in vitro model of sleep and awake brain states <i>S. Hrabetova, A. Sherpa and F. Xiao</i>
24	Fronts of language replacement <i>N. Isern and J. Fort</i>

25	Computer modeling of atomic clusters formation in grain boundaries <i>A. Itckovich and B. Bokstein</i>
26	Anomalous diffusion with heterogeneity in view of superstatistics <i>Y. Itto</i>
27	Effective diffusion coefficient in one-dimensional heterogeneous solids: a comparison of continuous and discrete lattice models <i>J.R. Kalnins, E.A. Kotomin and V.N. Kuzovkov</i>
28	Stories from the interior of porous materials – recorded by NMR <i>W. Kittler, H. Liu, F. Zong, S. A. Hertel, M. Nogueira d'Eurydice, X. Wang, P. Hosking, M. C. Simpson, T. A. Kuder, F. Laun, M. Hunter, S. Obruchkov and P. Galvosas</i>
29	Phase transitions in driven single-file diffusion of suspended particles <i>J. Kurzhals, M. Dierl and P. Maass</i>
30	Diffusion-controlled kinetics of metallic colloid formation in irradiated Al <sub>2</sub> O <sub>3</sub> , MgO and NaCl crystals <i>V.N. Kuzovkov, E.A. Kotomin, A.I. Popov and R. Vila</i>
31	Diffusion and self-assembly of charged nanoparticles in polar media: a competition between short-range and long-range interactions <i>V.N. Kuzovkov, G. Zvejnieks and E.A. Kotomin</i>
32	4 Coupled compartments – an analytical solution for diffusion and reaction kinetics <i>W. Larisch</i>
33	Interference and IR-Microscopy for Studies of Nanoporous Materials: An Insightful View on Intracrystalline Molecular Transport <i>A. Lauerer, C. Chmelik, J. Haase and J. Kärger</i>
34	Calibration of the diffusion coefficients of the FCS standard Rhodamine 6G (Rh6G) in aqueous solutions <i>G. Majer and K. Zick</i>
35	Testing the (time) <sup>1/4</sup> quartic root Diffusion Law of Ceramics Rehydroxylation <i>M. Moinester, E. Piasetzky and J. Kärger</i>
36	Transport of isopropanol in H-ZSM5 by impedance spectroscopy <i>T.Q. Nguyen, M. Glorius and C. Breitkopf</i>
37	Investigating the relationship between social learning efficiency and the diffusion of innovations <i>J. Ounsley, K. Laland and G. Ruxton</i>
38	Steady-state multicomponent gas diffusion in conical tubes and pores <i>F. Pille, J. Thöming and T. Veltzke</i>
39	Diffusion and molecular exchange in hollow core-shell silica nanocapsules <i>A. Pochert, D. Schneider, J. Haase, M. Lindén and R. Valiullin</i>

40	Modelling language shift in Carinthia, Austria <i>K. Prochazka and G. Vogl</i>
41	Kinetics of dissolution of liquid Pb nano-inclusions attached to a dislocation in aluminum <i>S.I. Prokofjev, E. Johnson and U. Dahmen</i>
42	Ragweed: diffusional spread and pollen load <i>R. Richter, M. Leitner and G. Vogl</i>
43	Dehydration diffusion of B(OH) <sub>4</sub> -sodalite investigated by micro-Raman spectroscopy on single crystals and combined TG/IR on powders <i>C.H. Rüschler, F. Kiesel, A. Schulz, L. Schomborg and J.C. Buhl</i>
44	Diffusion Limitations and Effectiveness Factor of Mesoporous and Hierarchically Structured Catalysts for SCR-DeNO <sub>x</sub> <i>E. Saraci, R. Arndt, J. Kullmann, D. Enke, T.-A. Meier, D. Belder, M.-O. Coppens and R. Gläser</i>
45	Diffusion coefficient as a function of mass for globular macromolecules <i>M.J. Saxton</i>
46	Collective dynamics in a multi-filament actin bundle <i>J. Schnauß, T. Golde, C. Schuldt, B. U. S. Schmidt, M. Glaser, D. Strehle, C. Heussinger and J. Käs</i>
47	Fluctuation dissipation theorem and Onsager coefficients in driven diffusion systems <i>B. Siemer, V. Holubec, P. Chvosta and P. Maass</i>
48	Dynamics of Linear and Cyclic Chains in Two Dimensions <i>A. Sikorski and P. Polanowski</i>
49	Modelling the geographical origin of rice cultivation in Asia using the Rice Archaeological Database <i>F. Silva, C.J. Stevens, A. Weisskopf, C. Castillo, L. Qin, A. Bevan and D.Q. Fuller</i>
50	Reaction fronts and ambipolar chemical diffusion in oxide crystals <i>M. Sinder, Z. Burshtein and J. Pelleg</i>
51	Adsorptive heat transformation with SAPO-34: diffusion of working fluids water, methanol and ethanol <i>T. Splith, C. Chmelik, F. Stallmach, S.K. Henninger, G. Földner, P.D. Kolokathis, E. Pantatosaki and G.K. Papadopoulos</i>
52	Disentangling Sources of Anomalous Diffusion <i>E. Thiel, F. Flegel and I.M. Sokolov</i>
53	Monitoring the interplay between diffusion and reaction during catalytic conversion in nanoporous materials <i>T. Titze, C. Chmelik, J. Kullmann, L. Prager, E. Mierseemann, R. Gläser, D. Enke, J. Weitkamp and J. Kärger</i>
54	Multicomponent gas diffusion in conical tubes <i>T. Veltzke, L. Kiewidt and J. Thöming</i>

<b>55</b>	The application of inverse gas chromatography to investigate diffusion resistance in FCC catalysts <i>D. Wallenstein, C.M. Fougret, S. Brandt and U. Hartmann</i>
<b>56</b>	Optimization of bifunctional catalysts in the presence of diffusion limitations, by using a single particle model and a fixed bed model <i>G. Ye and M.-O. Coppens</i>
<b>57</b>	Diffusion across the Interface of an Liquid-Liquid System <i>T. Zeiner</i>
<b>58</b>	A local composition model for the prediction of mutual diffusion coefficients in binary liquid mixtures from tracer diffusion coefficients <i>Q. Zhu, G.D. Moggridge and C. D'Agostino</i>

"Best Poster Awards" are scheduled for posters highlighting particularly impressively the impact and beauty of interdisciplinarity in diffusion research.

Accepted abstracts shall be published, together with short versions of the invited plenary talks, in the conference proceedings appearing as a special volume of the *Diffusion-Fundamentals Online Journal*.

As already tradition within the Diffusion Fundamentals conference series, all contributors of accepted poster abstracts are invited to submit a full length paper for publication in the *Diffusion-Fundamentals online journal* ([diffusion-fundamentals.org](http://diffusion-fundamentals.org)). Please use the [template \(.doc\)](#) given in the download section of the conference website and send your paper before December 31st, 2015 by e-mail to [abstract@diffusion-fundamentals.org](mailto:abstract@diffusion-fundamentals.org).



## List of Participants

Abad, Enrique, Prof.  
Universidad de Extremadura, Mérida, Spain

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University of Leipzig, Germany

Ascheron, Claus E., Dr.  
Springer – Senior Editor Physics, Heidelberg,  
Germany

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University of Leipzig, Germany

Becker, Thijs, Dr.  
Hasselt University, Belgium

Bhatt, Jayesh, Dr.  
University College London, UK

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Ye, Guanghua  
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Zegeling, Paul A., Dr.  
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Zeiner, Tim, Dr.-Ing.  
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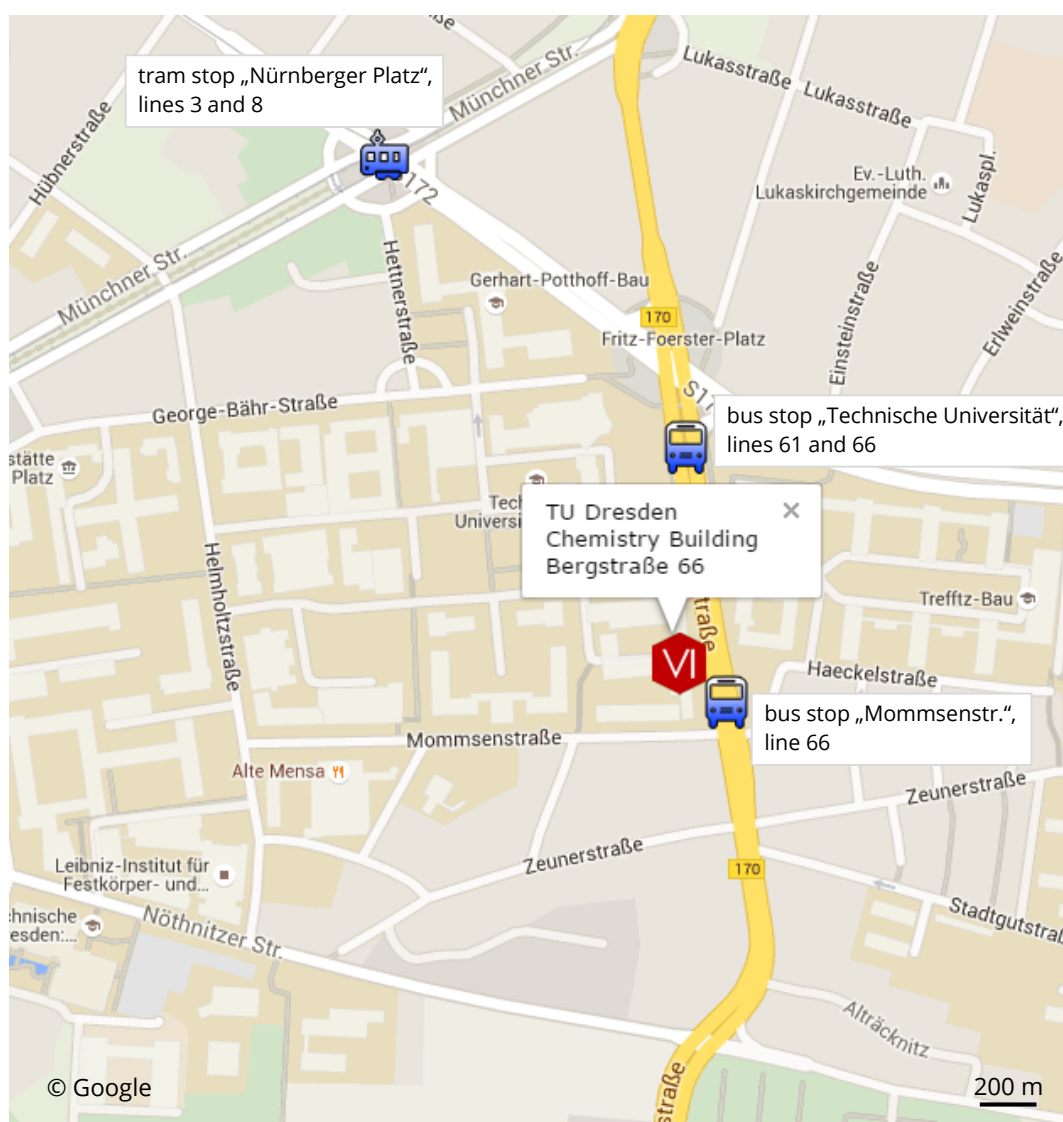
Zhu, Qingyu  
University of Cambridge, United Kingdom

Zick, Klaus, Dr.  
Bruker BioSpin GmbH, Rheinstetten,  
Germany

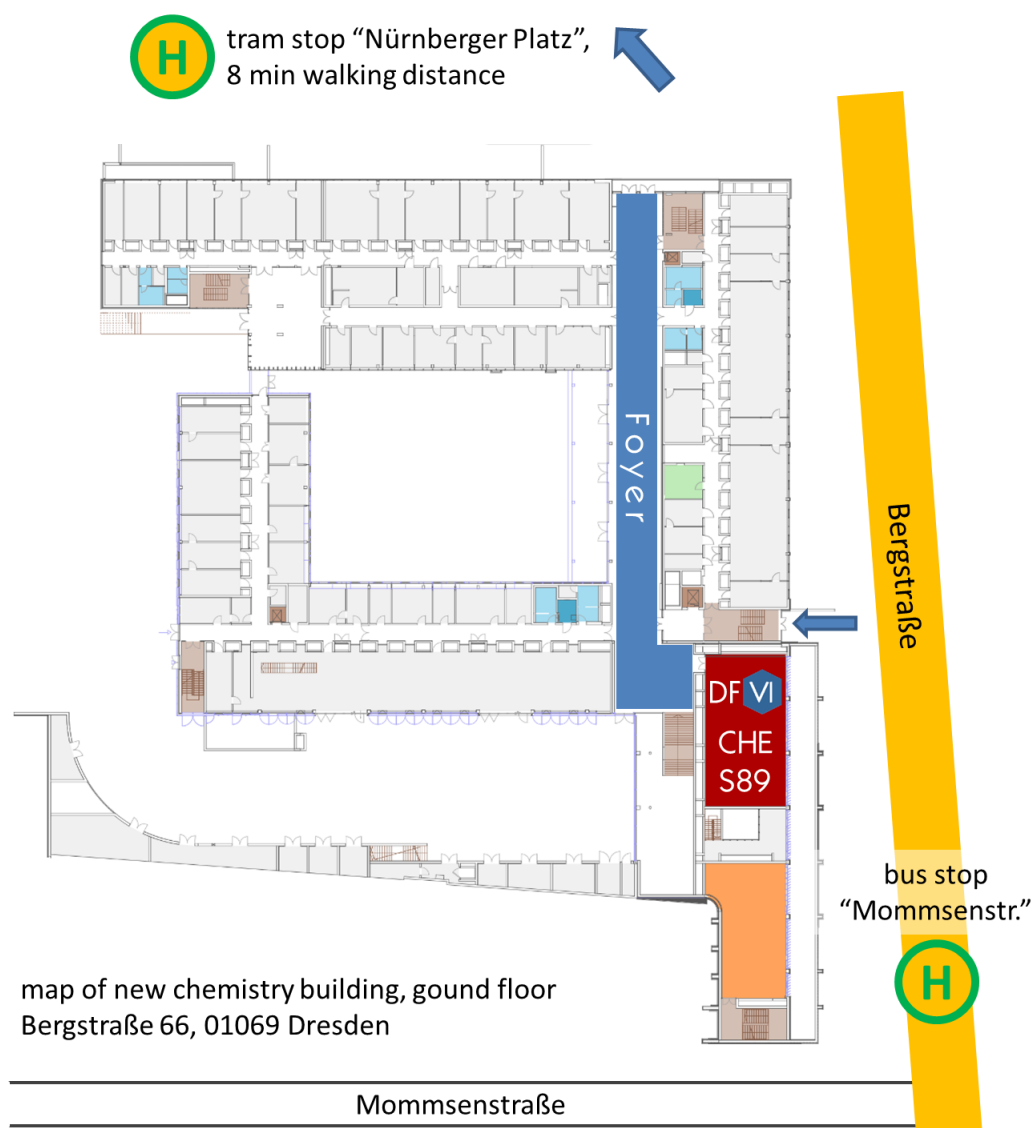
## Location of Diffusion Fundamentals VI

The conference will take place at: *Dresden University of Technology, Chemistry Building, lecture theatre CHE S89, Bergstraße 66, 01069 Dresden, Germany.*


The new chemistry building can be accessed using tram lines 3 and 8 (tram stop "Nürnberger Platz") or by the bus lines 66 (bus stops "Mommsenstraße" or "Technische Universität") and 61 (bus stop "Technische Universität").



Don't forget to validate your ticket when entering the bus or tram. The fare for a single journey ticket is 2.20 €. Price-conscious travellers can buy four single tickets in one at a discount (8 €). For short trips (distances up to the fourth stop after entering trams and buses) it is worth buying a 4-trip ticket for short journeys (5.50 €). Tickets can be purchased at ticket machines at all main stops. On buses, drivers sell tickets themselves. They can only provide you with the main ticket types and take only suitable money. General information on the Dresden public transportation system, schedules of tram and bus lines and the tickets can be found at [www.dvb.de](http://www.dvb.de).



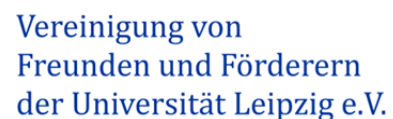
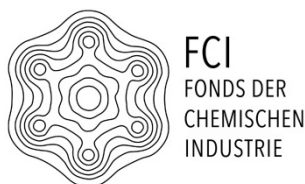
The lectures will be given in the lecture theatre CHE S89 on the ground floor. The conference office is located in the foyer of the building. Also the Welcome Party on Sunday, the lunches, poster sessions and coffee breaks take place in the foyer, next door to the lecture hall.

The conference dinner on Tuesday 25<sup>th</sup> will take place at the restaurant "Pulverturm" which is located in the historical centre of Dresden next to *Frauenkirche* (see  symbol on the back cover). Nearby tram stops are "Synagoge" (lines 3 and 7), "Pirnaischer Platz" (lines 1, 2, 3, 4, 7 and 12) and "Altstadt" (lines 1, 2 and 4). From the conference site you may take tram line 3 from "Nürnberger Platz" (direction "Dresden Wilder Mann") to "Pirnaischer Platz" or "Synagoge" (5 or 6 stops, respectively). The walking distance from main train station is about 25 min (ca. 2 km).

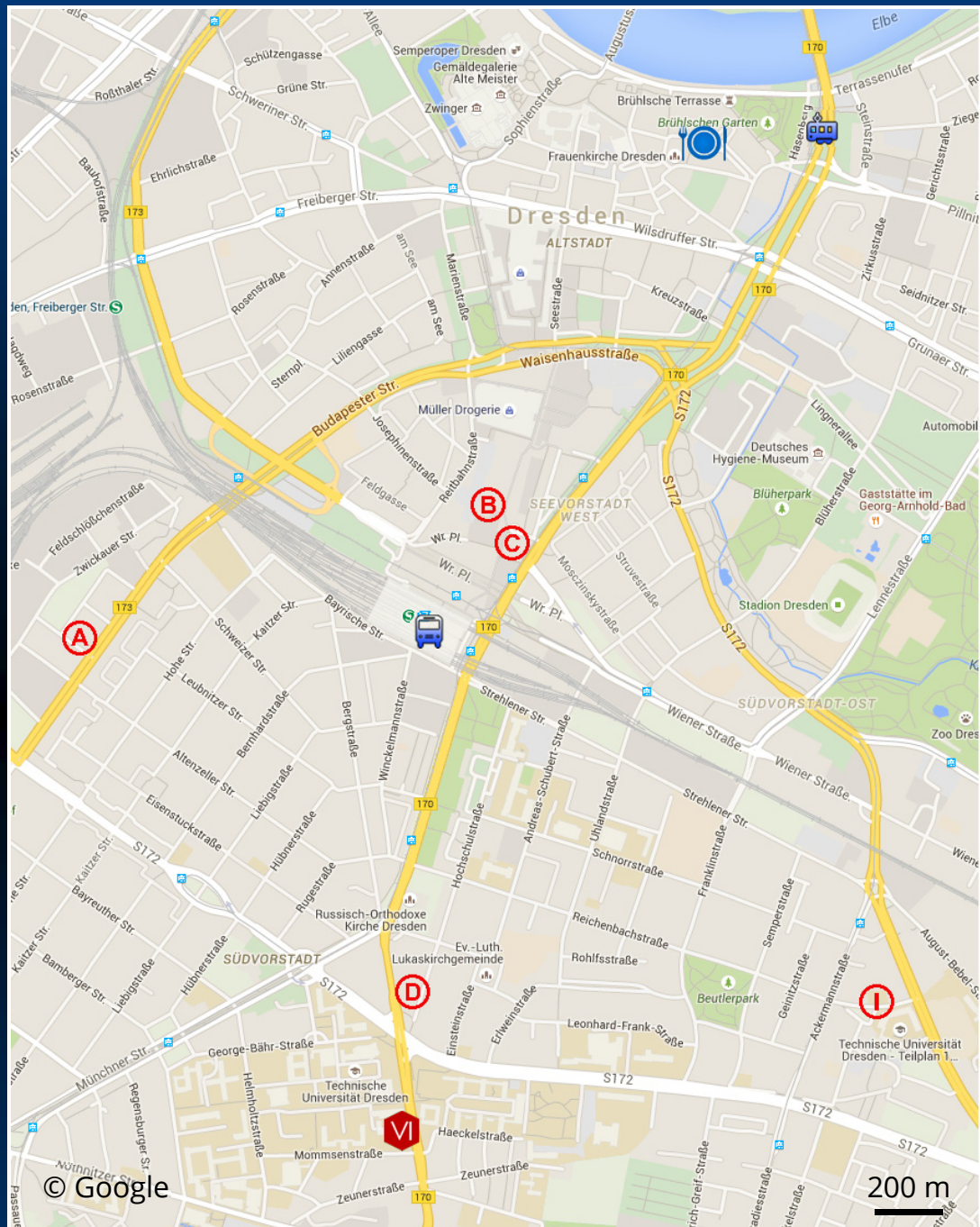
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We gratefully acknowledge support by:



# Map of Dresden



	ACHAT Comfort Dresden		Conference Venue
	Ibis Hotels Dresden		Conference Dinner
	Pullman Dresden Newa		Main Train Station
	International Guesthouse		Tram Stop "Synagoge"
	Guesthouse "Am Weberplatz"		