

## Chemical and Polymer Physics Division Fachverband Chemische Physik und Polymerphysik (CPP)

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### Overview of Invited Talks, Topical Talks and Sessions

(lecture rooms ZEU 222, ZEU 160, and ZEU 114; Poster P1 and P2)

#### Invited and Topical Talks of CPP Sessions (excluding Focused Sessions)

CPP 2.1	Mon	10:30–11:00	ZEU 222	<b>Crayfish combine amorphous and crystalline mineral to build a functional tooth structure</b> — •BARBARA AICHMAYER, SHMUEL BENTOV, ALI AL-SAWALMIH, ADMIR MASIC, PAUL ZASLANSKY, PETER FRATZL, AMIR SAGI, AMIR BERMAN
CPP 5.1	Mon	14:00–14:30	ZEU 222	<b>Light harvesting in single polymer chains and inorganic nanostructures</b> — •JOHN M. LUPTON
CPP 6.7	Mon	15:45–16:15	ZEU 160	<b>Charge-Controlled Protein Crystallization</b> — •FAJUN ZHANG, GEORG ZOCHER, ANDREA SAUTER, MARCELL WOLF, FELIX ROOSEN-RUNGE, THILO STEHLE, FRANK SCHREIBER
CPP 12.1	Tue	10:30–11:00	ZEU 222	<b>Modelling charge transport in organic semiconductors</b> — •DENIS ANDRIENKO
CPP 14.1	Tue	10:30–11:00	ZEU 114	<b>Network effects in nano-filled polymer systems</b> — •KAY SAALWÄCHTER, CORNELIUS FRANZ, KERSTIN SCHÄLER, SALIM OK, MARTIN STEINHART, AURELIE PAPON, FRANCOIS LEQUEUX, HELENE MONTES
CPP 17.1	Tue	14:00–14:30	ZEU 114	<b>Modulated mesophases: from labyrinths to liquid ferroelectric chords.</b> — •ALEXEY EREMIN, ULRIKE KORNEK, RALF STANNARIUS, ANTAL JÁKLI, HIDEO TAKEZOE
CPP 25.1	Wed	10:30–11:00	ZEU 222	<b>From elementary building blocks towards colloidal molecules</b> — CLAUDIA SIMONE WAGNER, •ALEXANDER WITTEMANN
CPP 31.1	Wed	14:00–14:30	ZEU 222	<b>Control of Charge Carrier Dynamics in Disordered Conjugated Polymers</b> — •DIRK HERTEL
CPP 39.9	Thu	12:30–13:00	ZEU 222	<b>Combining structure and mechanical properties of colloidal systems</b> — MARCEL ROTH, CHRIS GRIGORIADIS, JINYU ZHAO, BURKHARD MAYER, DORIS VOLLMER, GEORGE FLOUDAS, •GÜNTER. K. AUERNHAMMER
CPP 40.1	Thu	10:30–11:00	ZEU 160	<b>Crystallization in block copolymer thin films</b> — •CHRISTINE M. PAPADAKIS, CHARLES DARKO, GÜNTER REITER
CPP 41.1	Thu	10:45–11:15	ZEU 114	<b>Local Anisotropy of Fluids, Glasses and Jammed Bead Packs</b> — •GERD SCHROEDER-TURK
CPP 41.7	Thu	12:30–13:00	ZEU 114	<b>Concentration fluctuations and intrinsic confinement effects in binary glass forming liquids: Insights from neutron scattering and X-ray photon correlation spectroscopy</b> — •THOMAS BLOCHOWICZ, SEBASTIAN SCHRAMM, EMMANUEL GOUIRAND, PHILIPP GUTFREUND, BERND STÜHN, BERNHARD FRICK, YURIY CHUSHKIN
CPP 43.1	Thu	14:00–14:30	ZEU 222	<b>NanoModel - Multi-Scale Modelling of Nano-Structured Polymeric Materials</b> — •HORST WEISS
CPP 43.15	Thu	18:00–18:30	ZEU 222	<b>Are nanomaterials safe? Physico-chemical characterization for regulation and for life-cycle assessment of nanocomposites</b> — •WENDEL WOHLLEBEN
CPP 46.1	Fri	10:30–11:00	ZEU 222	<b>Droplet-based microfluidics and the dynamics of emulsions</b> — •JEAN-CHRISTOPHE BARET

## Invited Talks of the Tutorial “Physics with neutrons – from proteins via polymer thin films to spin waves”

See Tutorials for the full program. (organizer: C. Papadakis)

CPP 1.1	Sun	16:00–16:45	HSZ 403	<b>Neutrons as a sensitive tool to investigate nano- and mesostructured materials</b> — ●STEPHAN FÖRSTER
CPP 1.2	Sun	16:45–17:30	HSZ 403	<b>Reflectivity and GISAS</b> — ●ROLAND STEITZ
CPP 1.3	Sun	17:45–18:30	HSZ 403	<b>Neutron spectroscopy on solids</b> — ●ASTRID SCHNEIDEWIND

## Invited Talks of the SKM-Symposium “Elementary Processes in Organic Photovoltaics” (SKM-SYOP)

See SKM-SYOP for the full program of the Symposium.

SKM-SYOP 1.1	Mon	10:30–11:00	TRE Ma	<b>Charge separation in organic solar cells and the principle of detailed balance</b> — ●UWE RAU, THOMAS KIRCHARTZ
SKM-SYOP 1.2	Mon	11:00–11:30	TRE Ma	<b>Three-Dimensional Nanoscale Organization of Bulk Heterojunction Polymer Solar Cells</b> — ●JOACHIM LOOS
SKM-SYOP 1.3	Mon	11:30–12:00	TRE Ma	<b>Reliable prediction of charge transfer excitations using optimally tuned range-separated hybrid functionals</b> — ●LEEOR KRONIK
SKM-SYOP 1.4	Mon	12:00–12:30	TRE Ma	<b>Charge separation and recombination in organic solar cells</b> — ●JAMES DURRANT
SKM-SYOP 1.5	Mon	12:30–13:00	TRE Ma	<b>Efficient and stable organic vacuum deposited p-i-n-type tandem solar cells</b> — ●MARTIN PFEIFFER

## Invited Talks of the Focused Sessions “Confinement of Polymers in Nanoscopic Layers - How Much do Properties Change?”

Properties of polymers forced into the one-dimensional confinement of nanometric thin layers are a cutting-edge and -in part- highly controversial topic of current polymer research. Some of the open questions are of quite fundamental nature. It is the aim of this Focus-Session to bring together the exponents of the different views and to compare and discuss the experimental and theoretical findings on the influence of confinement and interfacial interactions on structural and dynamic properties and the glass transition of polymers confined in thin layers. (organizers: G. Reiter and M. Stamm)

CPP 13.1	Tue	10:30–11:00	ZEU 160	<b>Rheological Response of Ultrathin Polymer Films</b> — ●GREGORY MCKENNA, PAUL O’CONNELL, JINHUA WANG
CPP 13.2	Tue	11:00–11:30	ZEU 160	<b>Molecular dynamics at nanometric length-scales</b> — ●FRIEDRICH KREMER
CPP 13.3	Tue	11:30–12:00	ZEU 160	<b>On the origin of the deviations from bulk behavior in ultrathin polymer films: from glass transition to tracer diffusivity</b> — ●SIMONE NAPOLITANO, MICHAEL WÜBBENHORST, CINZIA ROTELLA
CPP 13.4	Tue	12:00–12:30	ZEU 160	<b>Calorimetry of Thin Films – From Single Layer Glass Transitions to Inter-layer Diffusion in Double Layers</b> — ●CHRISTOPH SCHICK, DONGSHAN ZHOU, HEIKO HUTH
CPP 16.1	Tue	14:00–14:30	ZEU 160	<b>Glass Transition Dynamics of Polymer Films</b> — ●OPHELIA K. C. TSUI
CPP 16.2	Tue	14:30–15:00	ZEU 160	<b>Conformational properties of polymer melts in spatial confinement</b> — HENDRIK MEYER, ALBERT JOHNER, JOACHIM WITTMER, JULIA ZABEL, JEAN FARAGO, ●JÖRG BASCHNAGEL

## Invited Talks of the Intersectional Symposium “Transport and Spectroscopy in Molecular Nanostructures” (SYMN)

See SYMN for the full program of the Symposium.

SYMN 1.1	Wed	10:30–11:00	HSZ 01	<b>Exciton localization and dynamics in molecular aggregates</b> — •JASPER KNOESTER
SYMN 1.2	Wed	11:00–11:30	HSZ 01	<b>Spectroscopy and transport in carbon nanotubes and graphene nanoribbons for electronics and biological applications</b> — •OLEG PREZHDO
SYMN 1.3	Wed	11:30–12:00	HSZ 01	<b>Multidimensional Optical Spectroscopy of Biological Complexes</b> — •SHAUL MUKAMEL
SYMN 1.4	Wed	12:00–12:30	HSZ 01	<b>Theory of light-harvesting in photosynthetic pigment-protein complexes</b> — •THOMAS RENGER, MARCEL SCHMIDT AM BUSCH, M. EL-AMINE MADJET, FRANK MÜH
SYMN 1.5	Wed	12:30–13:00	HSZ 01	<b>How do algae use quantum mechanics to harvest light for photosynthesis?</b> — •GREGORY SCHOLES

## Invited Talks of the Focused Session “Computational Polymer Physics – New Developments”

The increasing power of modern computers and the development of new models and techniques enhances the importance of computer simulations for investigating complex polymer systems and to solve long-standing questions in polymer science. The aim of this focus-session is to present the state of the art of computational polymer physics to a broader audience. The session covers different approaches to polymer systems starting from techniques which model the specific details of polymers, self-consistent field methods, exact sampling methods and new MC and MD approaches to soft matter problems. (organizer: J.-U. Sommer)

CPP 33.1	Wed	14:00–14:30	MOL 213	<b>Multiscale Simulation of Soft Matter: Challenges</b> — •FLORIAN MÜLLER-PLATHE
CPP 33.2	Wed	14:30–15:00	MOL 213	<b>A self-consistent field approach for crosslinked polymer materials</b> — •FRIEDERIKE SCHMID
CPP 33.3	Wed	15:00–15:30	MOL 213	<b>Mechanical separation of short double stranded DNA: Effect of pulling geometry</b> — •SANJAY KUMAR
CPP 33.4	Wed	15:45–16:15	MOL 213	<b>Soft coarse-grained models for multi-component polymer melts</b> — •MARCUS MÜLLER
CPP 33.5	Wed	16:15–16:45	MOL 213	<b>Simulations of Polymer Electrolytes for Lithium-Ion Batteries Highly Accurate Polarizable Potentials</b> — •GRANT SMITH

## Invited Talks of the SKM-Symposium Heterogenous Nucleation and Microstructure Formation: Steps towards a System and Scale-bridging Understanding” (SKM-SYMF)

See SKM-SYMF for the full program of the Symposium.

SKM-SYMF 1.1	Thu	14:30–15:00	TRE Ma	<b>Visualizing the structural solid-liquid transition with colloidal suspensions</b> — •PETER SCHALL
SKM-SYMF 1.2	Thu	15:00–15:30	TRE Ma	<b>Crystallization process in suspensions of hard spheres</b> — •TANJA SCHILLING, HANS-JOACHIM SCHOEPE, MARTIN OETTEL, GEORGE OPLETAL, IAN SNOOK
SKM-SYMF 1.3	Thu	15:30–16:00	TRE Ma	<b>Homogeneous bulk, surface, and edge nucleation in crystalline nanodroplets</b> — •KARI DALNOKI-VERESS, JESSICA CARVALHO
SKM-SYMF 1.4	Thu	16:00–16:30	TRE Ma	<b>Polymer Crystallization: Ordered Structures in Complex Systems</b> — •JENS-UWE SOMMER
SKM-SYMF 1.5	Thu	16:30–17:00	TRE Ma	<b>Phase formation and microstructure development in multi-component alloys</b> — •JÜRGEN ECKERT

## Sessions

CPP 1.1–1.3	Sun	16:00–18:30	HSZ 403	<b>Tutorial: Physics with neutrons - from proteins via polymer thin films to spin waves</b>
CPP 2.1–2.9	Mon	10:30–13:00	ZEU 222	<b>Biopolymers and Biomaterials I (jointly with BP)</b>
CPP 3.1–3.10	Mon	10:30–13:00	ZEU 160	<b>Interfaces and Thin Films I</b>
CPP 4.1–4.5	Mon	10:15–13:00	HSZ 103	<b>Focus Session "Nanoparticles, Nanocrystals and Colloids" (jointly with MA)</b>
CPP 5.1–5.12	Mon	14:00–17:30	ZEU 222	<b>Organic Semiconductors I: Solar Cells A (jointly with HL, DS)</b>
CPP 6.1–6.12	Mon	14:00–17:30	ZEU 160	<b>Charged Soft Matter</b>
CPP 7.1–7.13	Mon	14:00–17:30	ZEU 114	<b>Interfaces and Thin Films II</b>
CPP 8.1–8.53	Mon	17:30–19:30	P2	<b>Poster: Organic Semiconductors</b>
CPP 9.1–9.10	Mon	17:30–19:30	P2	<b>Poster: Biopolymers and Biomaterials</b>
CPP 10.1–10.11	Mon	17:30–19:30	P2	<b>Poster: Charged Soft Matter</b>
CPP 11.1–11.19	Mon	17:30–19:30	P2	<b>Poster: New Instruments and Methods</b>
CPP 12.1–12.9	Tue	10:30–13:00	ZEU 222	<b>Organic Semiconductors II: Solar Cells B (jointly with HL, DS)</b>
CPP 13.1–13.6	Tue	10:30–13:00	ZEU 160	<b>Focused Session: Confinement of Polymers in Nanoscopic Layers - How Much do Properties Change? I</b>
CPP 14.1–14.9	Tue	10:30–13:00	ZEU 114	<b>Elastomers and Gels</b>
CPP 15.1–15.5	Tue	14:00–15:15	ZEU 222	<b>Organic Semiconductors III: Aggregation and Nanostructures (jointly with HL, DS)</b>
CPP 16.1–16.4	Tue	14:00–15:30	ZEU 160	<b>Focused Session: Confinement of Polymers in Nanoscopic Layers - How Much do Properties Change? II</b>
CPP 17.1–17.4	Tue	14:00–15:15	ZEU 114	<b>Liquid Crystals</b>
CPP 18.1–18.9	Tue	18:00–20:00	P1	<b>Poster: Transport and Spectroscopy in Molecular Nanostructures (Intersectional Session with MO)</b>
CPP 19.1–19.24	Tue	18:00–20:00	P2	<b>Poster: Interfaces and Thin Films</b>
CPP 20.1–20.5	Tue	18:00–20:00	P2	<b>Poster: Computational Soft Matter Physics</b>
CPP 21.1–21.8	Tue	18:00–20:00	P2	<b>Poster: Confinement of Polymers in Nanoscopic Layers - How Much do Properties Change?</b>
CPP 22.1–22.9	Tue	18:00–20:00	P2	<b>Poster: Glass Transition and Dynamics of Liquids</b>
CPP 23.1–23.17	Tue	18:00–20:00	P2	<b>Poster: Semicrystalline Polymers, Polymer Crystallization and Self-Assembly</b>
CPP 24.1–24.7	Tue	18:00–20:00	P2	<b>Poster: Polymer Dynamics</b>
CPP 25.1–25.9	Wed	10:30–13:00	ZEU 222	<b>Colloids and Complex Liquids I - Structure</b>
CPP 26.1–26.5	Wed	10:30–11:45	ZEU 160	<b>Polymer Dynamics</b>
CPP 27.1–27.4	Wed	12:00–13:00	ZEU 160	<b>Polymer Self Assembly</b>
CPP 28.1–28.9	Wed	10:15–13:00	ZEU 260	<b>Biopolymers and Biomaterials II (jointly with BP)</b>
CPP 29.1–29.10	Wed	15:00–17:45	ZEU 260	<b>Biopolymers and Biomaterials III (jointly with BP)</b>
CPP 30.1–30.11	Wed	10:15–13:00	KÖN Farb	<b>Glasses and Glass Transition I (jointly with DY, DF)</b>
CPP 31.1–31.10	Wed	14:00–17:00	ZEU 222	<b>Organic Semiconductors IV: Excitations and Charges (jointly with HL, DS)</b>
CPP 32.1–32.11	Wed	14:00–17:00	ZEU 160	<b>Transport and Spectroscopy in Molecular Nanostructures I (related to SYMN, jointly with MO)</b>
CPP 33.1–33.5	Wed	14:00–16:45	MOL 213	<b>Focused Session: Computational Polymer Physics - New Developments (jointly with DY)</b>
CPP 34.1–34.13	Wed	17:00–19:00	P2	<b>Poster: Elastomers and Gels</b>
CPP 35.1–35.24	Wed	17:00–19:00	P2	<b>Poster: Micro- and Nanofluidics</b>
CPP 36.1–36.24	Wed	17:00–19:00	P2	<b>Poster: Nanoparticles and Composite Materials</b>
CPP 37.1–37.3	Wed	17:00–19:00	P2	<b>Poster: Heterogeneous Nucleation and Microstructure Formation (related to SYMF)</b>
CPP 38.1–38.37	Wed	17:00–19:00	P2	<b>Poster: Colloids and Complex Liquids</b>
CPP 39.1–39.9	Thu	10:30–13:00	ZEU 222	<b>Colloids and Complex Liquids II - Dynamics and Mechanical Properties</b>
CPP 40.1–40.9	Thu	10:30–13:00	ZEU 160	<b>Polymer Crystallization and Semicrystalline Polymers</b>
CPP 41.1–41.7	Thu	10:45–13:00	ZEU 114	<b>Glasses and Glass Transition II (jointly with DY, DF)</b>
CPP 42.1–42.10	Thu	10:30–13:00	TOE 317	<b>Transport and Spectroscopy in Molecular Nanostructures II (related to SYMN, jointly with CPP)</b>
CPP 43.1–43.15	Thu	14:00–18:30	ZEU 222	<b>Nanoparticles and Composite Materials I</b>
CPP 44.1–44.15	Thu	14:00–18:00	ZEU 160	<b>Micro- and Nanofluidics I</b>

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CPP 45.1–45.3	Thu	17:15–18:00	ZEU 114	<b>Colloids and Complex Liquids III - External Fields</b>
CPP 46.1–46.9	Fri	10:30–13:00	ZEU 222	<b>Micro- and Nanofluidics II</b>
CPP 47.1–47.9	Fri	10:30–12:45	ZEU 160	<b>Heterogeneous Nucleation and Microstructure Formation (related to SYMF, jointly with MM)</b>
CPP 48.1–48.10	Fri	10:30–13:00	ZEU 114	<b>Nanoparticles and Composite Materials II</b>

### Annual General Meeting of the Chemical and Polymer Physics Division

Mittwoch 19:15–20:00 ZEU 160

- Bericht
- Frühjahrstagung 2012
- Verschiedenes