

MATERIALS CHAIN

INFOMAIL November 2019



November 29, 2019



Events

Save the Date

3rd Materials Chain International Conference MCIC 2020



November 24 – 26, 2020 | UA Ruhr, Bochum, Germany

Dear Materials Chain members,

the next Materials Chain International Conference, **MCIC 2020**, will take place from

November 24 to 26, 2020 at Ruhr-Universität **Bochum**'s convention centre. Please save the date!

The **5 core topics of the conference** reflect the breadth of materials research from atoms to products within the UA Ruhr:

1. 2D and hybrid functional materials
2. Materials for energy conversion
3. Data driven and combinatorial materials science
4. Metals, alloys and magnetism
5. Production engineering and additive manufacturing

Further information will follow in due time.

Please feel free to forward the note to interested colleagues at your institute and beyond.

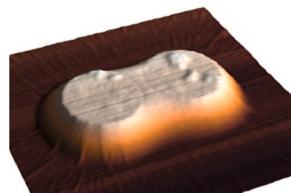
Latest News

TU Researchers Bring Light into Darkness

The interaction of light and matter is decisive for our lives. Examples are photosynthesis in nature or photovoltaics for solar cells. This is why intensive efforts are being made worldwide to optimize the interaction of light and matter.

Researchers at the TU Dortmund are playing a major role in this. This week they presented the results of their research together with an international team in the renowned journal *Nature Communications*.

More



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Material Impales Bacteria

Like on a nail board, bacteria are damaged on a newly developed surface with nano columns. The aim is to prevent the colonisation of implants. The model for this is nature. Around 350,000 people in Germany are fitted with a new joint every year.

Knees and hip joints are the classics. In most cases, everything goes well, but in two to five percent of all cases, an infection occurs after the operation.

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Alexander von Humboldt Research Fellowship

Dr. Chin Ken Wong is a fellow of the Alexander von Humboldt Foundation (AvH). Since October, he has been supported by the Foundation's Postdoctoral Fellowship. The chemist has been a



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research assistant at the Gröschel Working Group since October. He is researching the development of artificial building blocks for the transport of substances in the body.

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New/Coordinated Projects

Third Funding Phase for CRC 103

To ensure that turbines in aircraft and gas power plants live as long as possible and work efficiently, the team at Collaborative Research Center 103 "From atoms to turbine blades - scientific basis for a new generation of single-crystal superalloys" is optimizing the microstructure of the turbine material. The German Research Foundation (DFG) has now approved the third and final funding phase of the Collaborative Research Centre/Transregio (SFB/TRR) at Ruhr Universität Bochum (RUB) until 2023.

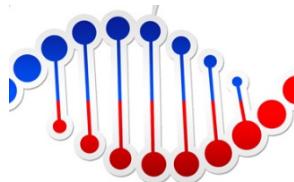
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New Magnets for Future Energy Technologies

State-of-the-art functional materials, such as strong permanent magnets for use in wind turbines and electric motors, or magnetic materials for efficient cooling, are needed to transition to a low emissions future. The German Science Foundation (DFG) has therefore granted €12 million for a new Collaborative Research Center (CRC) called "HoMMage". This centre will begin its first 4 years on 1st of January 2020 at Technische Universität Darmstadt and the University of Duisburg-Essen (UDE). More



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1.5 Million Euros for Test Centre

Autonomous inland waterway vessels with electric propulsion would be good for the climate. But a lot

still needs to be programmed and tested. The Development Center for Ship Technology and Transport Systems (DST), a University of Duisburg-Essen (UDE) associated institute in Duisburg, is therefore setting up a test and management center. Dr. Hendrik Schulte, State Secretary at the NRW Ministry of Transport, was happy to announce funding of 1.5 million euros for the test centre.

More



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The Next Step: From Excellent Research to Start-ups

In chemistry, it is harder for founders to establish a company than in other fields. The start-up centre "Start4Chem", which has just been launched, offers help. Docked to the Ruhr Explores Solvation (Resolv) excellence cluster, it is part of the Start-up Centre NRW, for the construction of which the RUB is receiving state funding totalling more than 20 million euros.

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Awards (Congratulation!)

Lecturer Award of the Chemical Industry Fund for Ulf-Peter Apfel

Dr. Ulf-Peter Apfel has received the Lecturer Award of the German Chemical Industry Fund. The group leader at the Fraunhofer Institute for Environmental, Safety and Energy Technology in Oberhausen and at the Ruhr University Bochum accepted the award, which is endowed with 75,000 euros, in Ludwigshafen on October 30, 2019.

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PHD Award of the Verband der Elektrotechnik

On November 20, Dr. Franziska Muckel will be honored for her outstanding dissertation. She is awarded this year's doctoral prize by the Rhine-Ruhr Electrical and Electronic Manufacturers' Association (VDE). She received her doctorate in March 2019 from the UDE in the working group of Prof. Gerd Bacher.

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Sparkasse Duisburg Awards Prizes

The Sparkasse Duisburg has now honoured four students and four doctoral students* for their outstanding achievements. Two of them are members of working groups in our Materials Chain. The prizes are endowed with 2,000 and 1,000 euros respectively.

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Publication Highlights

Photoresponsive Halogen-Bonded Liquid Crystals: The Role of Aromatic Fluorine Substitution

Saccone, M. and Spengler, M. and Pfletscher, M. and Kuntze, K. and Virkki, M. and Wölper, C. and Gehrke, R. and Jansen, G. and Metrangolo, P. and Priimagi, A. and Giese, M.

Chemistry of Materials 31 462-470 (2019)

[more](#)

Tracking Dark Excitons with Exciton Polaritons in Semiconductor Microcavities

Schmidt, D. and Berger, B. and Kahlert, M. and Bayer, M. and Schneider, C. and Höfling, S. and Sedov, E.S. and Kavokin, A.V. and Aßmann, M.

Physical Review Letters 122 (2019)

[more](#)

**Low-Temperature Plasma-Enhanced Atomic Layer Deposition
of Tin(IV) Oxide from a Functionalized Alkyl Precursor:
Fabrication and Evaluation of SnO₂-Based Thin-Film Transistor
Devices**

Mai, L. and Zanders, D. and Subaşl, E. and Ciftyurek, E. and Hoppe, C. and Rogalla, D. and Gilbert, W. and Arcos, T.D.L. and Schierbaum, K. and Grundmeier, G. and Bock, C. and Devi, A.

ACS Applied Materials and Interfaces (2019)

more

[See all publications](#)

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