

May 2020



## Latest News

### **Kristina Tschulik is a Member of the NRW Academy of Sciences**

Prof. Kristina Tschulik, chemist at the Ruhr-Universität Bochum (RUB), will become a new member of the North Rhine-Westphalian Academy of Sciences and Arts. The head of the strongly interdisciplinary research group Electrochemistry and Nanoscale Materials was elected to the class for engineering and economics. Her work focuses on electrochemical materials research.

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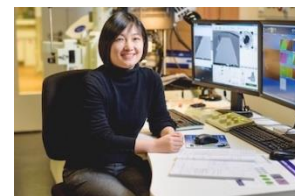


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### **More Courage for Creativity**

The achievements in the field of artificial intelligence make engineer Tong Li pensive about human thinking habits. In 2017, researchers have created an artificial intelligence that has independently learned the Chinese board game "Go" without human guidance or prior knowledge. In just 40 days, the computer became the best Go player in the world - an incredible achievement.

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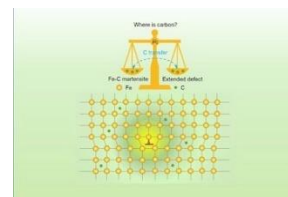


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### **How Interstitial Ordering Affects High-strength Steels**

The performance of materials is strongly influenced by their alloying elements: Adding elements beyond the basic composition of the alloy can strongly influence the properties and performance of it. In practice, it is not only important which elements are added, but also to which amounts and how they order in the host lattice.

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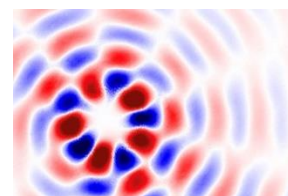
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## New/Coordinated Projects

### Physics Collaborative Research Centre Prolonged

Rapidly changing materials and measuring techniques in the femtosecond range: These are the core aspects of the Collaborative Research Centre 1242 of the Faculty of Physics at University of Duisburg-Essen (UDE). The German Research Foundation (DFG) is funding it for another four years with €12 million.

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## Awards

### Distinguished Lecture Award in Thermodynamics and Transport Properties

High distinction for Prof. Gabriele Sadowski from the Faculty of Biochemical and Chemical Engineering at TU Dortmund University: The European Federation of Chemical Engineering (Fédération Européenne de Génie Chimique/EFCE) awarded her as the first woman the "Distinguished Lecture Award in Thermodynamics and Transport Properties".

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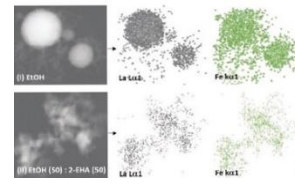
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### Popular Paper from Engineers

A publication from the working group of Materials Chain member Prof. Hartmut Wiggers in the AIChE Journal is one of the most frequently read papers of the journal in the years 2018/2019.

Under the title "Spray-flame synthesis of La(Fe, Co)O<sub>3</sub> nano-perovskites from metal nitrates" the team around first author Steven Angel published in the journal of the American Institute of Chemical Engineers.

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### Suitability of Imaging Techniques Proven

A publication in which PhD student Elzbieta Stepula from the working group of Materials Chain member Prof. Sebastian Schlücker (University of Duisburg-Essen) is involved was awarded the silver WITec Paper Award. This makes it one of three award-winning papers out of 113 submissions.

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### Nature Research Awards Prizes

Researchers and all those involved in the STEM area for girls and women can still apply for the Nature Research Awards for Inspiring and Innovating Science until 14 June. They are endowed with 30,000 US dollars each. For the award in the Scientific Achievement category, young female researchers are sought who "identify themselves as women and have made an exceptional contribution to scientific progress, sometimes despite adverse circumstances.

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## Publication Highlights

### Performance of YSZ and Gd<sub>2</sub>Zr<sub>2</sub>O<sub>7</sub>/YSZ double layer thermal barrier coatings in burner rig tests

Vaßen, R. and Bakan, E. and Mack, D. and Schwartz-Lückge, S. and Sebold, D. and Jung Sohn, Y. and Zhou, D. and Guillon, O.  
*Journal of the European Ceramic Society* 40 480-490 (2020)

[more](#)

**An energy-relaxation-based framework for the modelling of magnetic shape memory alloys—Simulation of key response features under homogeneous loading conditions**

Bartel, T. and Kiefer, B. and Buckmann, K. and Menzel, A.  
*International Journal of Solids and Structures* 182-183 162-178  
(2020)

[more](#)

**Effects of acetylene flow rate and bias voltage on the structural and tribo-mechanical properties of sputtered a-C:H films**

Tillmann, W. and Ulitzka, H. and Lopes Dias, N.F. and Stangier, D.  
and Thomann, C.A. and Moldenhauer, H. and Debus, J.  
*Thin Solid Films* 693 (2020)

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