

March 2020

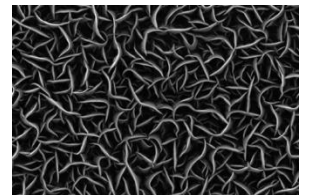


Latest News

## UA Ruhr Project Finalist in Clusters 4 Future Competition

To develop new materials and technologies for a sustainable energy supply in the Rhine-Ruhr region - and then bring them quickly to market: This is the goal of a future cluster, supported by players from the University Alliance Ruhr (UA Ruhr). The project is among the finalists in the competition of the Federal Ministry of Research, competing for a funding of up to €5 million per year for a maximum of nine years

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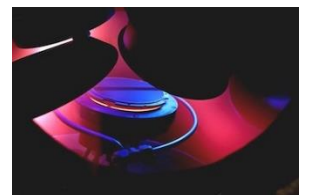


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## Finding Optimal Materials Recipes Using AI

The possible properties of nanostructured layers are countless - but how can you find the optimal one without long experimentation? A materials research team from Ruhr-Universität Bochum (RUB) tried a shortcut: Using a machine learning algorithm, the researchers were able to reliably predict the structural properties of such a layer. They report in the new journal "Communications Materials" from March 26, 2020.

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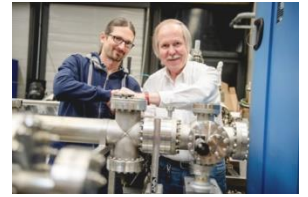


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## Expansion of Quantum Physical Phenomenon Measured for the First Time

An international research team has for the first time determined the size of the so-called Kondo Screening Cloud. The quantum-physical phenomenon describes an interaction of conducting electrons with impurities in the material, which causes a reduction in electrical resistance. Prof. Andreas Wieck and Dr. Arne Ludwig from the Chair of Solid State Physics at Ruhr-Universität Bochum (RUB) were involved in the publication in the scientific journal Nature, online on March 11, 2020.

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## Bathen Re-elected as chairman

Prof. Dieter Bathen, holder of the Chair of Thermal Process Engineering at the University of Duisburg-Essen (UDE) and scientific director of the affiliated Institute for Energy and Environmental Technology (IUTA), has been re-elected for the third time as chairman of the ProcessNet division "Adsorption". Bathen has been head of the group, in which around 200 experts from process engineering, plant construction, metrology and technical chemistry are organized, since 2010 and has now been confirmed in office for another five years

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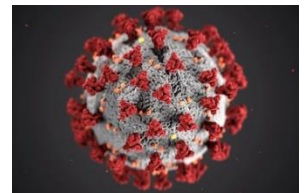
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## New/Coordinated Projects

### EU Project on Corona Vaccine

The novel coronavirus (SARS-CoV-2) has already claimed several thousand lives worldwide. A specific therapy or vaccination is not yet available. In an EU project, researchers led by Professors Jan Münch from University of Ulm and Thomas Schrader from the University of Duisburg-Essen (UDE) hope to accelerate the development of an effective antiviral therapy. In cooperation with other European partners, the researchers hope to quickly and efficiently test different potential active substances against the coronavirus.

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### 3D Printing for the Automotive Industry

Completely drive-ready cars cannot be printed from 3D printers. How the additive process could produce their plastic components is being investigated in the POLYLINE project by, among others, the Chair of Production Engineering at the University of Duisburg-Essen (UDE). Nationwide, 15 partners from science and industry are developing the digitized production line for the automotive industry. The project is funded by the Federal Ministry of Education and Research with 10.7 million euros for three years.

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## Awards (Congratulation!)

### CENIDE Conference 2020

The CENIDE Conference 2020, which took place again in the Kardinal-Schulte-Haus in Bergisch-Gladbach from March 2 to 4, 2020, was well-attended: About 100 participants - a good mixture of working group leaders and young scientists - informed themselves about research in other areas of the CENIDE network, exchanged views and discussed. Seven prizes for the best lectures and posters were also awarded.

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## Publication Highlights

### Moving cracks form white etching areas during rolling contact fatigue in bearings

Morsdorf, L. and Mayweg, D. and Li, Y. and Diederichs, A. and Raabe, D. and Herbig, M.  
*Materials Science and Engineering A* 771 (2020)

[more](#)

### Processing of a single-crystalline CrCoNi medium-entropy alloy and evolution of its thermal expansion and elastic stiffness coefficients with temperature

Laplanche, G. and Schneider, M. and Scholz, F. and Frenzel, J. and Eggeler, G. and Schreuer, J.  
*NScripta Materialia* 177 44-48 (2020)

[more](#)

### Effects on tool performance of cutting edge prepared by pressurized air wet abrasive jet machining (PAWAJM)

Wang, W. and Biermann, D. and Aßmuth, R. and Arif, A.F.M. and Veldhuis, S.C.  
*Journal of Materials Processing Technology* 277 (2020)

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