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Press release

Rethinking catalysis - from tradition to the future

Dr. Josep Cornellà appointed Director at the Max-Planck-Institut für Kohlenforschung



Dr. Josep Cornell wurde zum Direktor des Max-Planck-Instituts für Kohlenforschung ernannt, wo er an nachhaltiger Katalyse mit Bismut und Nickelkatalyse arbeiten wird. Foto: Patrick Kaut/KOFO Dr. Josep Cornellà has been appointed Director of the Max-Planck-Institut für Kohlenforschung in Mülheim an der Ruhr. From April 1st, the 40-year-old chemist joins the board of directors as the 6th scientific member. His research focuses on more sustainable catalysis using bismuth and other catalytic alternatives as well as continuing the institute's tradition in nickel catalysis.

Cornellà joined the institute in 2017 for its scientific reputation: "The Kohlenforschung is the number one institute for people interested in catalysis and fundamental research and has a

tremendous gravitational pull for young researchers", he says. "I never expected to stay this long, but that my time here continues as Director is a great honor and a task I look forward to." More than a decade ago, during his postdoctoral studies, he began to wonder whether bismuth, a heavy main group element, could be used in redox catalysis. At the time, it was little more than a mere curiosity, not explored in a systematic way, but the question stuck. "It wasn't a project aimed at solving an immediate problem," he recalls. "It was a bold, basic idea, the kind of research Max Planck stands for." His group has since shown that complexes of bismuth can truly emulate —and even surpass— the ability of transition metals in catalysis. Since the first basic questions were posed more than 10 years ago, bismuth has attracted considerable attention from the international research community and has developed extraordinarily due to its unexpected reactivity. Cornellà's department now continues to explore broader questions surrounding heavy main group elements in catalysis.

Despite the growing research in bismuth chemistry and catalysis, Cornellà is also committed to continuing the institute's legacy in nickel catalysis – a tradition dating back to former director Günther Wilke and the iconic "naked nickel" complexes developed in Mülheim in the 1950s and 60s. "Here, I got my hands on old lab books you won't find anywhere– wild nickel chemistry from another era, yet so modern," says Cornellà. "There's a whole history here. And I want to make sure that continues." One example of this revival is the group's development of Ni(stb)₃ complexes, air-stable Ni(0) complexes that made nickel catalysis more accessible to both academic and industrial chemists. The success of the subsequent patent proves that bold ideas and creative approaches can go far: "I love discussing possibilities and trying to answer questions with my team. When we get to the point to say, we can do this, all previous efforts and stress become worth it."

About Josep Cornellà

Josep Cornellà studied chemistry at the University of Barcelona and earned his PhD from Queen Mary University of London in 2012. After postdoctoral work at the The Scripps Research Institute (USA) and Institute of Chemical Research of Catalonia (Spain), he joined the Max-Planck-Institut für Kohlenforschung in 2017 as Max Planck Research Group Leader and created the "Sustainable Catalysis for Organic Synthesis" group. His research has received numerous honors, including the Heinz Maier-Leibnitz Prize (2021), an ERC Starting Grant (2020), the Ruhrpreis für Kunst und Wissenschaft (2020) and the OMCOS prize 2024. He was also featured on the C&EN's "Talented 12" list and the 2022 class "SN10: 10 scientists to watch" by Science News.