



CoBRAIN

Integrated Computational - Experimental Material Engineering of Thermal Spray Coatings

NEWSLETTER

Issue 7, July 2026



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COATINGS 2026 CONFERENCE - ATHENS

The CoBRAIN project reached a major dissemination milestone with the successful organisation of the COATINGS 2026 International Conference, held in Athens, Greece, and jointly organised by EXELISIS (Dissemination Manager of CoBRAIN) and MDPI. The event brought together the full CoBRAIN consortium alongside a wide international community of researchers, industry representatives, and stakeholders in advanced materials and coating technologies.



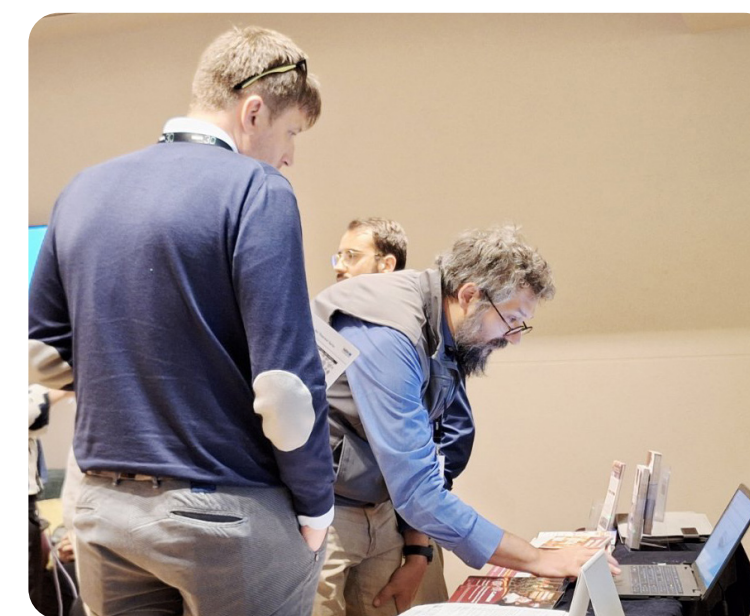
Over three intensive days, the conference welcomed more than 150 participants from 29 countries, clearly demonstrating the strong international visibility and growing impact of CoBRAIN in the fields of thermal spray coatings, materials engineering, and digital innovation. The strong participation of 60 Research and Technology Organisations (RTOs) and 40 Small and Medium-sized Enterprises (SMEs) highlighted the project's ability to connect research excellence with industrial needs, fostering meaningful exchange and collaboration across sectors and countries.

The scientific programme featured oral presentations, poster sessions, and thematic discussions covering the latest developments in coatings and surface engineering. A dedicated CoBRAIN session on Thermal Spraying technologies showcased key project achievements, while partners presented results re-

lated to materials modelling, design, and performance under demanding conditions. In total, 8 CoBRAIN scientific contributions were presented, along with an invited keynote speaker, reinforcing the project's scientific excellence and visibility within the research community.



A key highlight of the event was the strong focus on exploitation and practical application through the CoBRAIN Sustainable Decision Support System (SDSS). The tool was demonstrated live at the dedicated CoBRAIN booth, where participants engaged with real-time simulations, explored its functionalities, and interacted with "Technology Cards" designed to capture industrial requirements and application scenarios. This hands-on approach significantly strengthened stakeholder engagement and showcased how CoBRAIN outputs can be translated into practical decision-support solutions for industry.



Beyond the scientific programme, COATINGS 2026 also provided an important networking platform, strengthening collaboration between academia, research organisations, and industry across Europe and beyond. The event concluded with a memorable Gala Dinner under the iconic view of the Acropolis, offering a unique opportunity for informal exchange and celebration of the project's achievements in a truly inspiring setting.



The official COATINGS 2026 video captures the atmosphere of the conference, highlighting the scale of participation, the diversity of scientific contributions, the SDSS demonstrations, and the strong collaborative spirit of the CoBRAIN community. This visual output serves as an important dissemination asset, further enhancing the visibility and outreach of project results.



Overall, COATINGS 2026 represents a major milestone in the CoBRAIN project implementation, showcasing significant progress in advanced coatings, digital decision-making tools, and sustainable materials engineering. The results presented in Athens clearly reflect the strong impact of CoBRAIN and its contribution to strengthening European research collaboration, industrial engagement, and innovation in surface engineering technologies.

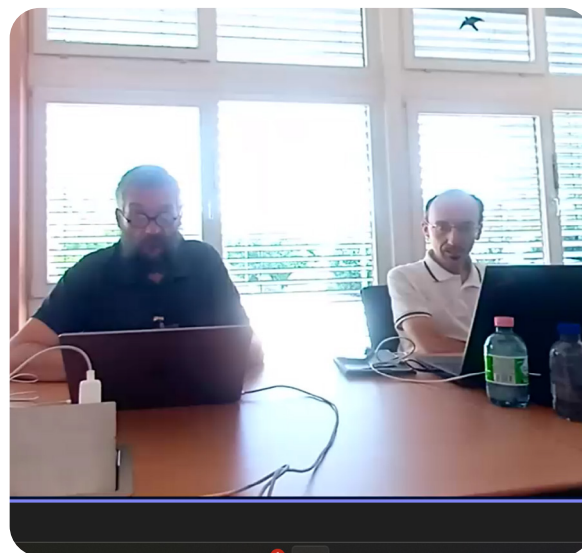


43M CONSORTIUM MEETING (7th - 8th JUL, 2026)

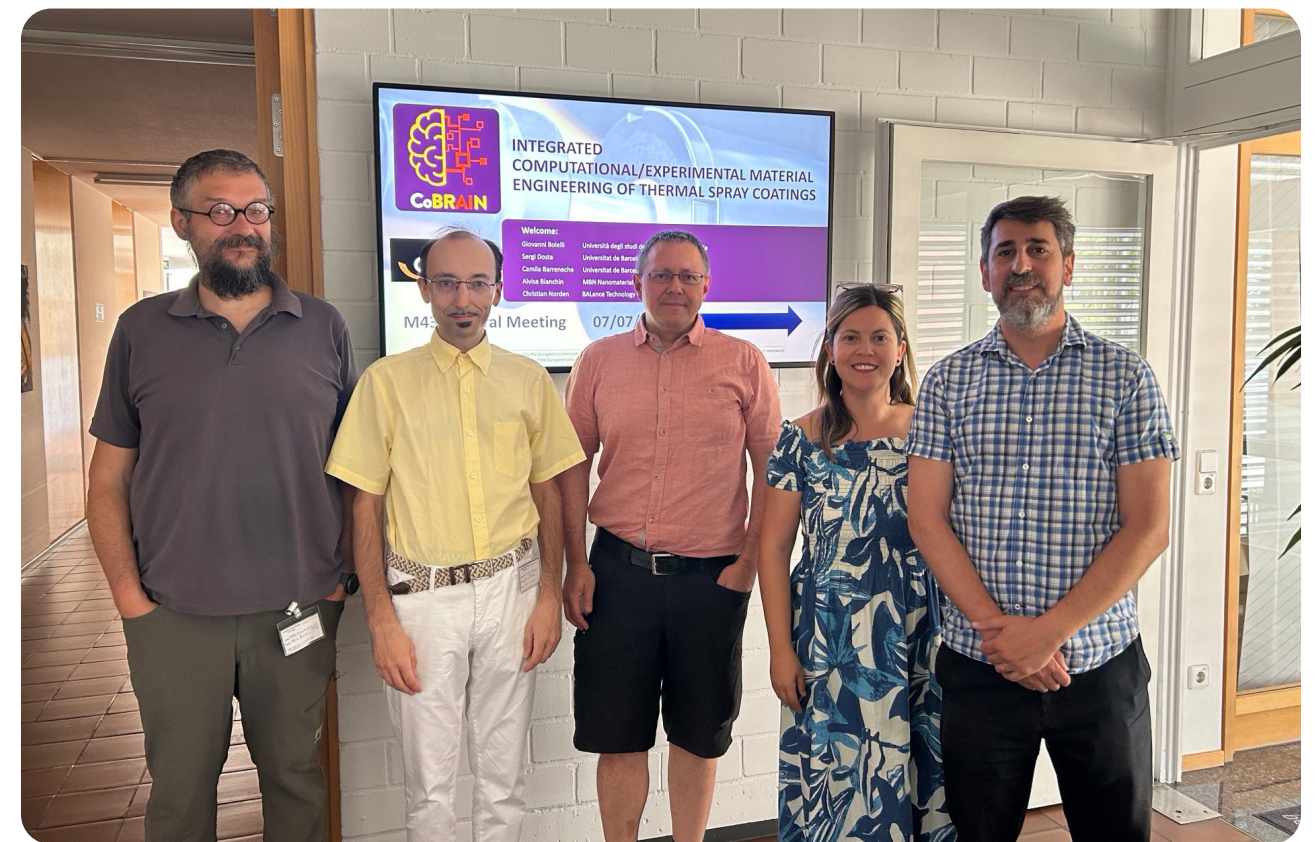
The CoBRAIN consortium meeting held in Bad Krozingen (Germany), hosted by OBZ, was another excellent opportunity for partners to come together and take stock of the project's progress in a highly collaborative and constructive atmosphere. Throughout the meeting, partners actively shared updates on their ongoing activities, presenting key results, technical developments, and achievements across the different work packages. The discussions were dynamic and solution-oriented, reflecting the strong engagement and alignment within the consortium.



A wide range of presentations highlighted the continuous progress of CoBRAIN, with partners showcasing advances in materials modelling, coating development, digital tools, and experimental validation activities. The exchange of feedback during the sessions further strengthened coordination between work packages and helped to refine the next steps of implementation. The meeting once again confirmed the high level of scientific quality and commitment across all partners.



Overall, the 43M Consortium Meeting reinforced the excellent spirit of collaboration that defines CoBRAIN. The strong interaction between partners, combined with clear planning for upcoming activities, ensures that the project continues to progress smoothly towards its objectives, with shared ambition and a common vision for impactful results.



KIDS CORNER UPDATE

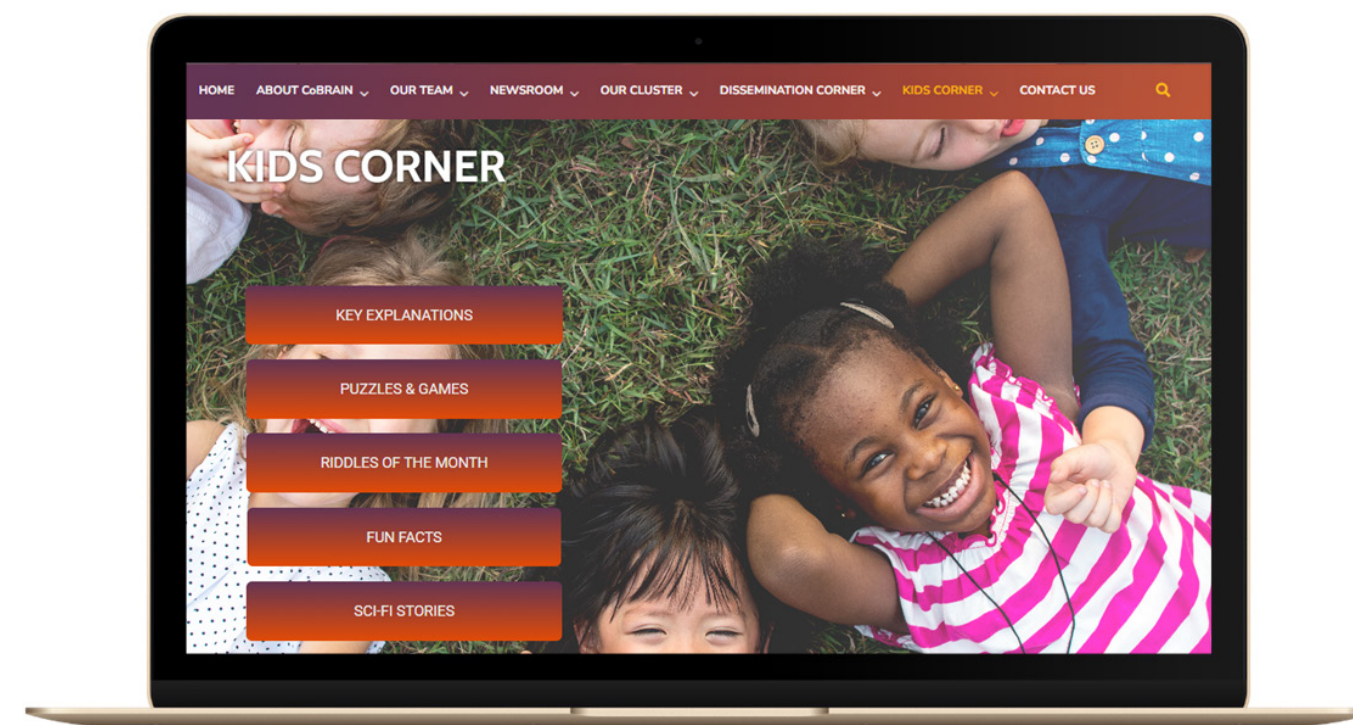
MINI GAMES FOR FAMILY

CoBRAIN’s Discovery Mini Channel – Kids Corner continues to evolve as a creative space where science, sustainability, and imagination come together. This initiative is designed to make complex research accessible and fun, helping younger audiences explore the world of materials, innovation, and green thinking through interactive and playful content.

This summer, we are excited to present the new Summer Edition, featuring fresh printable activities, mini-games, and creative learning materials inspired by CoBRAIN’s mission. Through simple storytelling and hands-on exercises, children are introduced to key ideas such as sustainability, smart materials, and environmental awareness in an engaging and enjoyable way.

The updated content also builds on our popular CoBRAIN riddles series, encouraging curiosity and critical thinking through fun challenges that connect directly with real scientific concepts explored within the project. Each riddle continues to bring science closer to young minds, transforming learning into an interactive discovery journey.

Through Kids Corner, CoBRAIN reinforces its commitment to outreach and education beyond the scientific community, ensuring that innovation and sustainability are shared in a way that is accessible, inspiring, and enjoyable for everyone.



CoBRAIN is disseminating its vision beyond the scientific community, actively engaging the general public through creative, accessible, and interactive initiatives. By transforming complex research into playful and relatable experiences, we ensure that sustainability and innovation are understood, shared, and embraced by all.

Come explore, learn, and enjoy
the world of science like never before!



CoBRAIN partners participated in several events during the 2nd semester of 2025 showcasing CoBRAIN project, and the achievements so far.



Young Professionals Award ITSC 2026

UMR

Bangkok (Thailand), 18 March 2026



Final Event of CoBRAIN by EXE and External CoBRAIN Workshop

All Partners

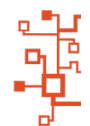
Athens (Greece), 20-22 April 2026



SDSS Tool First Release

Website

10 June 2026



External Workshop RIPT 2026

ACCESS, BAL, MBN, UMR, UB

Jülich (Germany), 12 June 2026



Scientific Paper

UMR, MBN

4 June 2026



Coatings 2026 CoBRAIN Final Event / Athens, (Greece) / 20-22 April 2026



SDSS Tool First Release



UMR: Young Professionals Award ITSC 2026 / Bangkok, (Thailand) / 18 March 2026



Coatings 2026 CoBRAIN Final Event / Athens, (Greece) / 20-22 April 2026



RIPT 2026 / Jülich, (Germany) / 12 June 2026

COATINGS 2026

SDSS TRAINING & DEMONSTRATION BOOTH



During the COATINGS 2026 International Conference in Athens, Greece, the CoBRAIN project organised a dedicated Sustainable Decision Support System (SDSS) training and demonstration activity. The CoBRAIN booth remained active throughout the three-day event, providing an interactive space for researchers, industrial stakeholders, coating specialists, and technology users to explore the project's digital solutions.

A key focus of the activity was the presentation of the CoBRAIN SDSS through live demonstrations and discussions, showcasing how the platform integrates experimental data, modelling results, and sustainability indicators to support the evaluation and selection of advanced coating solutions based on technical and sustainability criteria. The activity generated strong interest from both academic and industrial participants, enabling valuable discussions on the potential applications of the SDSS in different sectors. Visitors had the opportunity to interact with the tool, exchange views with project partners, and provide feedback on industrial needs and expectations. In addition, dedicated Technology Cards were collected to support the alignment of project results with market requirements and future technology transfer activities.



The successful demonstration of the SDSS at COATINGS 2026 highlighted the role of digital decision-support tools in advancing sustainable materials engineering and demonstrated CoBRAIN's contribution to the digital and green transformation of the coatings sector.

RIPT 2026

SDSS & ADVANCED THERMAL SPRAY INNOVATIONS

The 12th RIPT Conference in Jülich, Germany, provided an important opportunity for the CoBRAIN project to present its latest developments through a dedicated workshop on thermal spray technologies, advanced materials, and digital innovation. The session gathered researchers, engineers, and industrial stakeholders from the international coatings community, creating a valuable forum for knowledge exchange and discussion on emerging trends in surface engineering. Key CoBRAIN results were presented, including advances in Integrated Computational Materials Engineering (ICME), high-performance thermal spray coatings, multi-physics modelling, and innovative feedstock production approaches. Particular attention was given to the role of digitalisation in accelerating coating development, with the CoBRAIN Sustainable Decision Support System (SDSS) showcased as a tool supporting data-driven assessment and selection of coating solutions.



The workshop included contributions from the CoBRAIN Coordinator and consortium partners, who presented scientific achievements and ongoing research activities, encouraging discussions with participants from both academia and industry. The exchanges highlighted the importance of integrating



experimental approaches, modelling methodologies, and digital tools to address current challenges in advanced coating development. The participation in RIPT 2026 further enhanced CoBRAIN's visibility within the thermal spray community and demonstrated the project's contribution towards more efficient, sustainable, and digitally enabled surface engineering solutions.

MXENE BREAKTHROUGH BOOSTS CONDUCTIVITY BY 160 TIMES

Researchers have achieved a major breakthrough in MXene materials by developing a cleaner and more controlled manufacturing process that dramatically improves electrical conductivity, reaching values up to 160 times higher than previously achieved methods. The new approach allows scientists to produce ultra-clean MXene structures with fewer defects and significantly enhanced electron transport properties.

MXenes are a rapidly emerging family of advanced two-dimensional materials attracting worldwide scientific attention due to their exceptional electrical, thermal, and mechanical performance. Their potential applications extend across electronics, sensors, energy storage systems, smart coatings, electromagnetic shielding, and next-generation industrial technologies.

The breakthrough demonstrates how advanced materials engineering continues to accelerate innovation in high-performance and sustainable technologies. As industries increasingly seek lighter, smarter, and more efficient materials solutions, MXenes are expected to play a major role in shaping the future of materials science and industrial applications.

[CHECK MORE IN OUR WEBSITE](#)

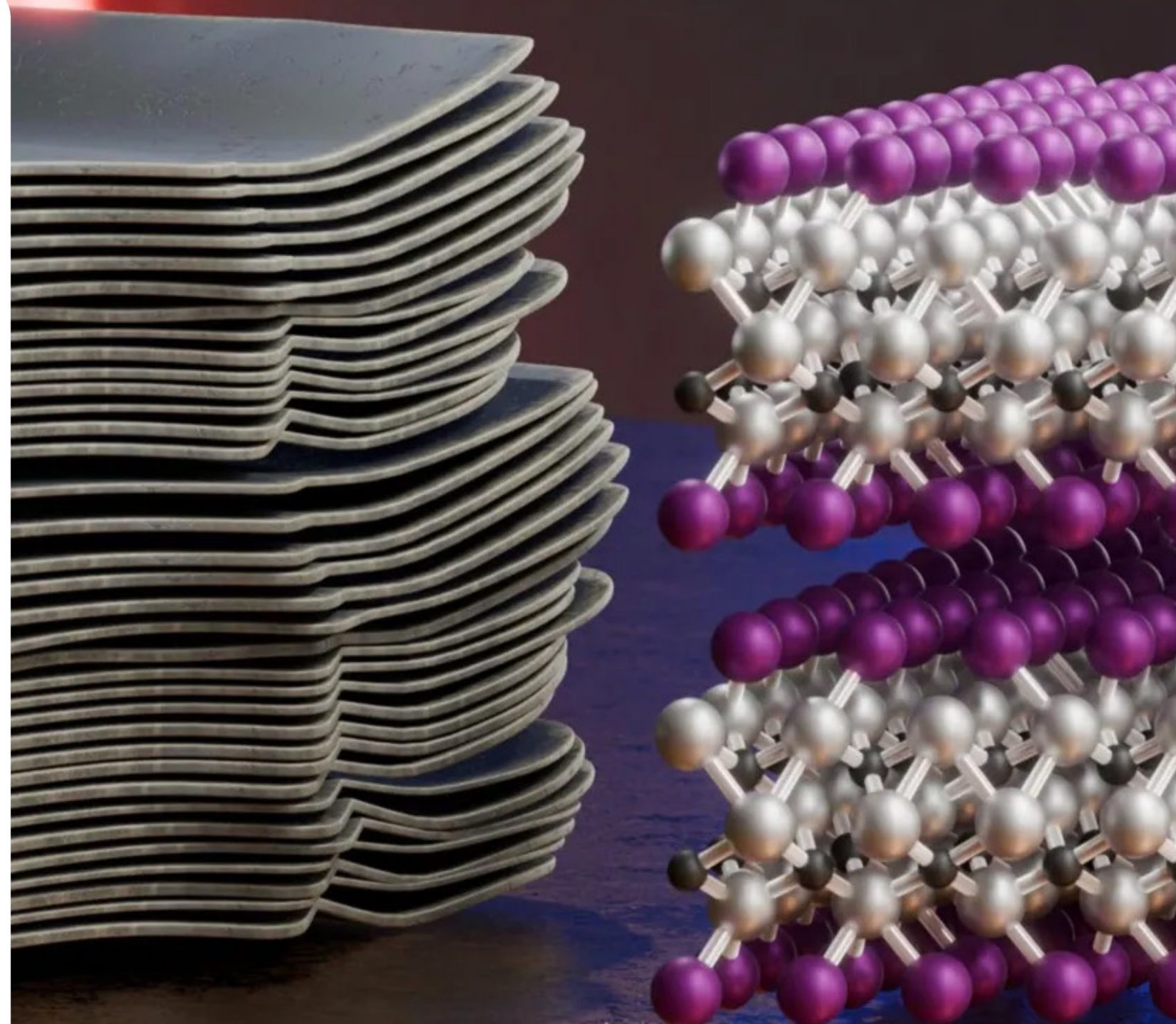


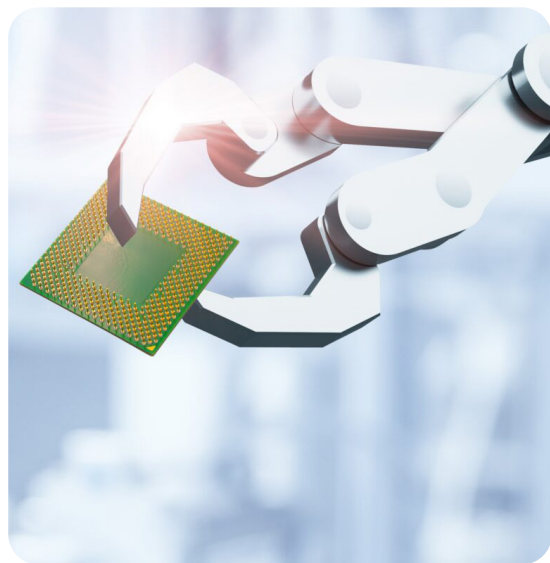
Image Copyright ©

The image combines a model derived from a scanning electron microscopy image (left) with a snippet of the underlying crystal structure of a studied MXene featuring precisely controlled surface terminations.

© HZDR/B.Schröder

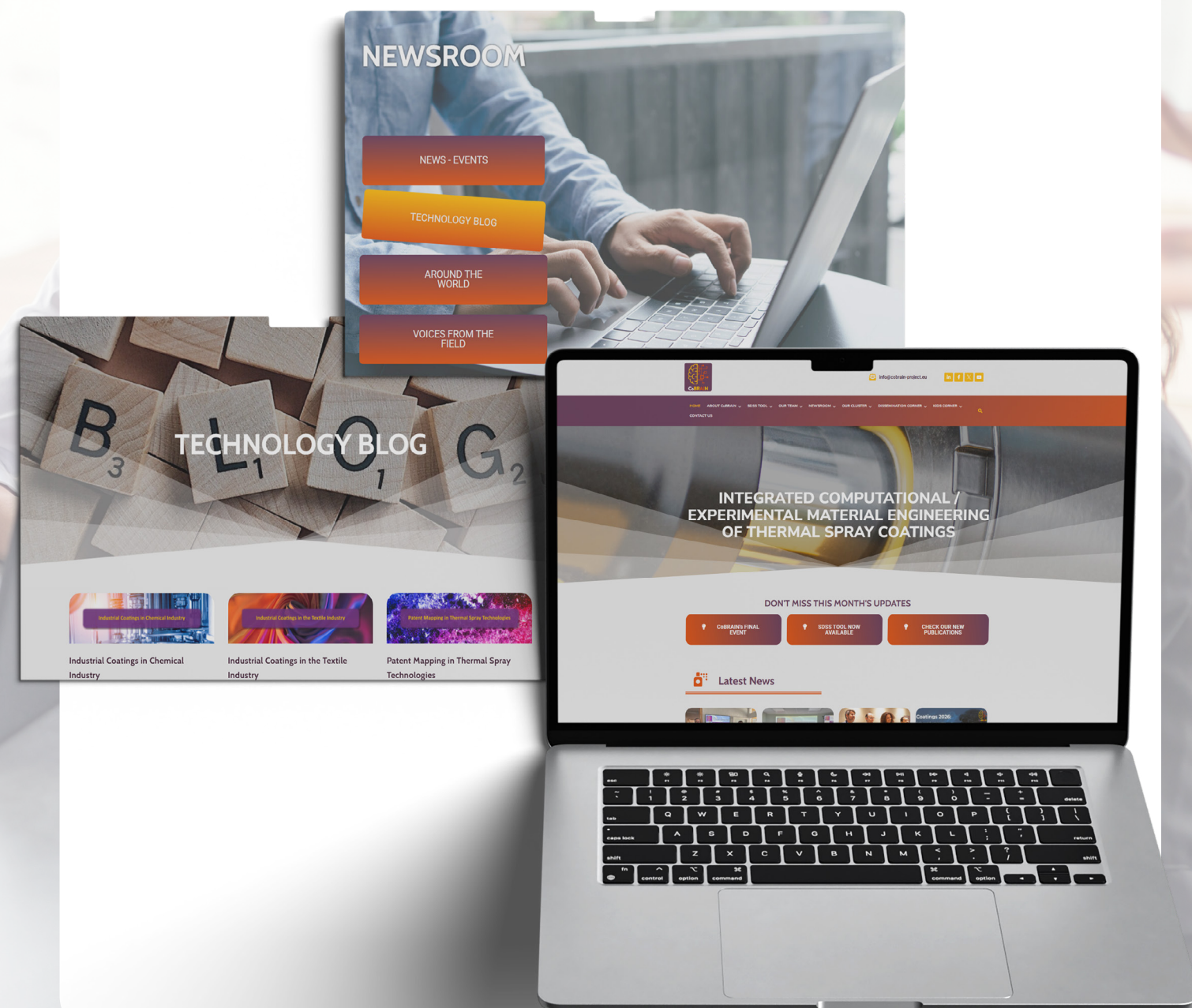
Discover the latest updates from CoBRAIN's Technology Blog. This edition features a new article exploring how advanced coating technologies, sustainable materials, and digital innovation are shaping the future of industrial applications across different sectors. From smart materials engineering to AI-supported decision-making tools, take a moment to explore the newest articles!

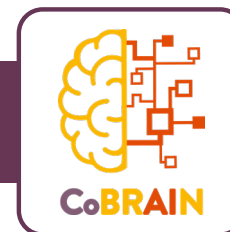
11TH BLOG ARTICLE - DIGITAL TWINS IN ADVANCED COATING MANUFACTURING



Digital twins are helping transform coating manufacturing by using real-time data, modelling, and AI to predict coating performance, optimise processes, and support predictive maintenance. These technologies improve reliability, reduce costs, and enhance sustainability across industries. Through its Sustainable Decision Support System (SDSS), CoBRAIN combines advanced coatings, digital tools, and sustainability assessment to support smarter decision-making and more efficient lifecycle management.

To read all our blog articles and learn more about CoBRAIN, visit our [website](#)





STRONGER TOGETHER CoBRAIN AND THE AiMPACT CLUSTER

As the CoBRAIN project moves through its final dissemination milestones, we would like to highlight the valuable collaboration developed throughout the project within the AiMPACT Cluster.

The AiMPACT Cluster brought together six Horizon Europe projects with a shared vision of advancing materials modelling, characterisation, digitalisation, and sustainable innovation across Europe. Through this collaboration, CoBRAIN had the opportunity to work alongside outstanding sister projects, strengthening scientific exchange, visibility, and cross-project cooperation throughout the project lifetime.

One of the key achievements of this collaboration was the creation of a common AiMPACT identity, including a shared cluster logo, joint dissemination activities, collaborative workshops, and coordinated communication actions. The cluster also successfully developed a common promotional poster and the official “AiMPACT in Action!” video, showcasing the collective impact and complementary expertise of all participating projects.

Throughout its dissemination activities, CoBRAIN proudly showcased four of the five sister projects through dedicated features, interviews, and communication actions, helping promote the broader AiMPACT ecosystem and reinforcing the importance of collaboration within Horizon Europe initiatives. The final sister project will also be presented in the upcoming final CoBRAIN Press Release, completing this collaborative journey.

Beyond dissemination, the AiMPACT Cluster created a dynamic environment for networking, idea exchange, and mutual support between projects working on advanced materials and AI-driven innovation. Joint participation in workshops, conferences, and communication activities demonstrated how collaboration can amplify scientific visibility and create stronger impact at the European level.

As several AiMPACT projects have already concluded, and others are approaching their final phase, CoBRAIN would like to sincerely thank all partners and sister projects for this inspiring collaboration journey.

The AiMPACT Cluster stands as an excellent example of how cooperation, openness, and shared goals can strengthen research excellence, innovation dissemination, and long-term impact across the European research community.

[CHECK OUR CLUSTER VIDEO IN YOUTUBE](#)

MEET THE CoBRAIN TEAM!



CoBRAIN



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