

JOHAN DEBAYLE 1977 - 2024

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(Received May 9, 2025)

Johan Debayle, professor at the Institut Mines-Télécom (IMT), deputy director of the Georges Friedel Laboratory and the Center for the Science of Industrial and Natural Processes (SPIN) at Mines Saint-Étienne, passed away on Thursday, September 5, 2024. He was also an adjunct professor at Gadjah Mada University (UGM) in Indonesia.

A distinguished researcher, Johan made significant contributions to the fields of image processing and stochastic geometry. His work combined both theoretical and applied perspectives, with a strong emphasis on developing mathematically rigorous methods to tackle fundamental challenges in mathematical morphology. Renowned in his field, he pioneered advanced techniques for applying stochastic geometry to model various material microstructures, forging a vital link between the scientific communities of image processing and materials physics. His research spanned diverse domains, including catalysis, porous media, and the microstructure of solid fuel cells. He also made fundamental contributions to traditional topics in mathematical morphology, with his work on adaptive image filtering remaining a reference in the field to this day.

Nothing illustrates the breadth of Johan's impact better than his leadership in the Thematic Network MORPHEA, of which he was among the active founding members and has served as director since 2023. MORPHEA brings together complementary expertise to address complex problems related to the dynamics of geometrically complex object populations—such as crystals, catalysts, bio-materials, aggregates or microorganisms. He has united the French scientific community by creating synergy between researchers in process engineering and applied mathematics in order to enable significant advances in understanding and modeling particulate processes and systems. Through this initiative, he has also fostered collaboration between academic researchers and industry professionals, emphasizing the practical application of scientific advances to industrial challenges.



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Beyond his scientific achievements, Johan will be remembered as a brilliant and highly respected colleague. Johan's precise, comprehensive, and always contextualized lectures provided great intellectual pleasure. Academic excellence and international collaboration were at the heart of his work. He served as an associate editor for seven prestigious scientific journals, including *Image Analysis and Stereology*, and was recently named a senior member of SPIE (International Society for Optics and Photonics). He was also appointed editor-in-chief of the international journal *Pattern Analysis and Applications* (Springer). He also organized the 13th European Congress for Stereology and Image Analysis, held in Saint-Etienne in 2021.

With Johan, we lose not only a respected colleague but also a dedicated and attentive mentor, a fair man and a friend. Today, we pay tribute to his memory.