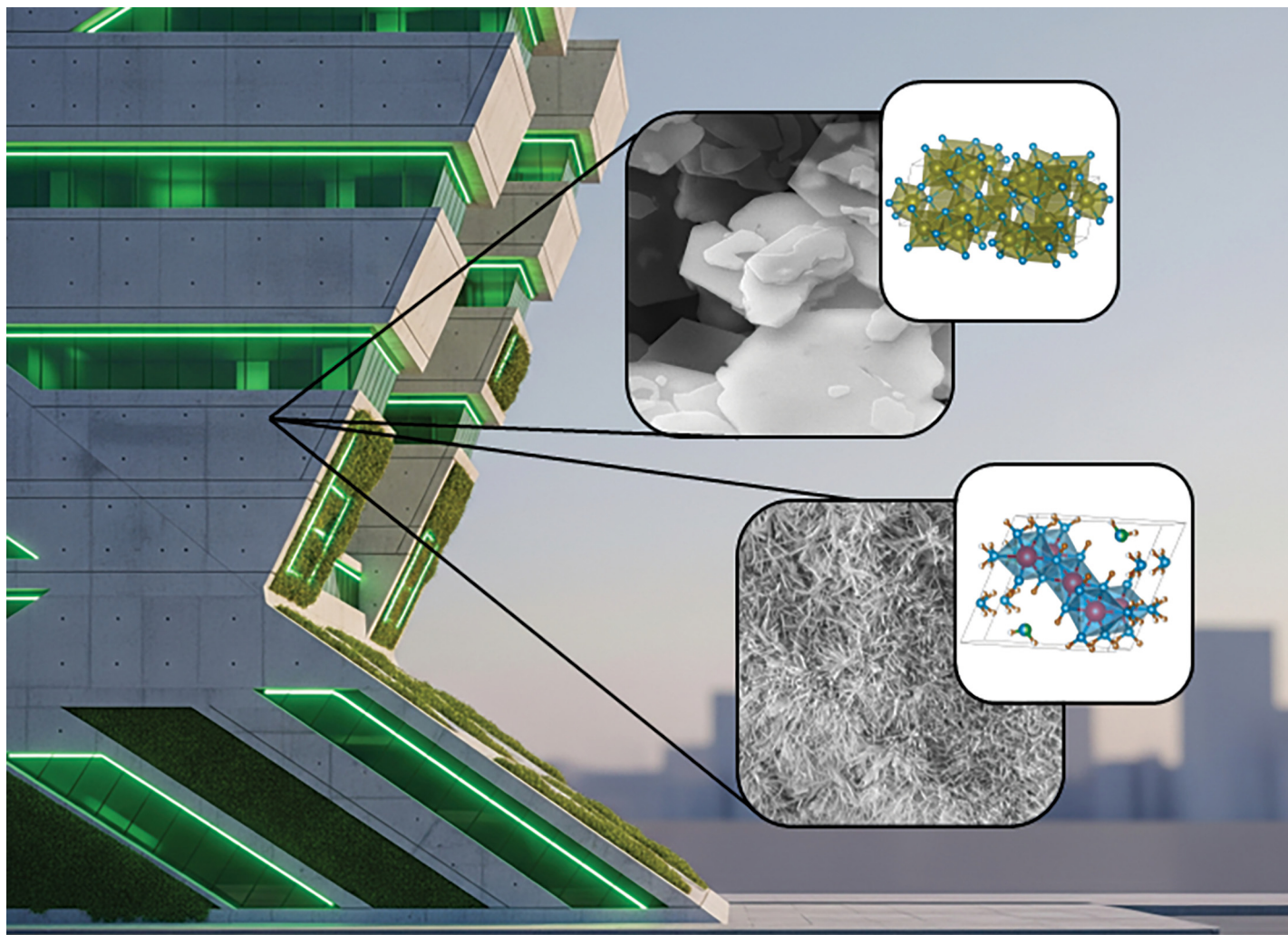




**Showcasing research from Professor Jankovsky's Advanced Composite Materials research group, University of Chemistry and Technology Prague, Czech Republic.**

**Nanoscale modification of MOC-based composites: the influence of alumina nanosheets on the microstructure and material properties**

The study presents the design and development of magnesium oxychloride cement- (MOC-) based construction composites modified with alumina nanosheets (ANS) as a high-performance eco-friendly alternative to Portland cement-based composites. The experimental campaign covered the optimization of ANS content in MOC-based composites for an improvement of mechanical strength and water resistance. It was proven that microstructural changes caused by ANS helped to increase compressive strength by up to 8.4% and the residual compressive strength after water immersion by 8.5% compared to non-modified MOC.

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**As featured in:**



See Anna-Marie Lauermannová *et al.*, *Mater. Adv.*, 2025, **6**, 3817.