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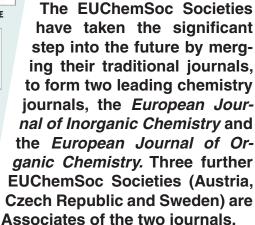














The cover picture shows the concept of selective anion separation using metal-organic frameworks. Functionalization of the coordination polymers with hydrogen-bonding groups for specific anion binding and recognition results in highly selective separations by direct anion exchange or competitive crystallization processes. The diagram in the lower-left corner depicts a qualitative model for anion separation selectivity, captured in three orthogonal concepts: complementarity (strength and number of anion-binding interactions), organizational rigidity of the framework, and softness (or degree of covalency for anion binding). The solvation-controlled (Hofmeister) selectivity that is normally observed in anion separations can be reversed (anti-Hofmeister) or completely replaced by peak selectivity (non-Hofmeister) when rigid, structurally constrained frameworks having a sufficient number of complementary anion-binding groups are employed, or when the anion is bound with a strong degree of covalency (soft-soft interactions). The background shows a structurally rigid metal-organic framework functionalized with -COOH anion-binding groups that exhibit peak selectivity for the Cl(H₂O)₄⁻ anionic cluster. Details are presented in the Microreview over on p. 1321 ff.

Portugal

