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15/1

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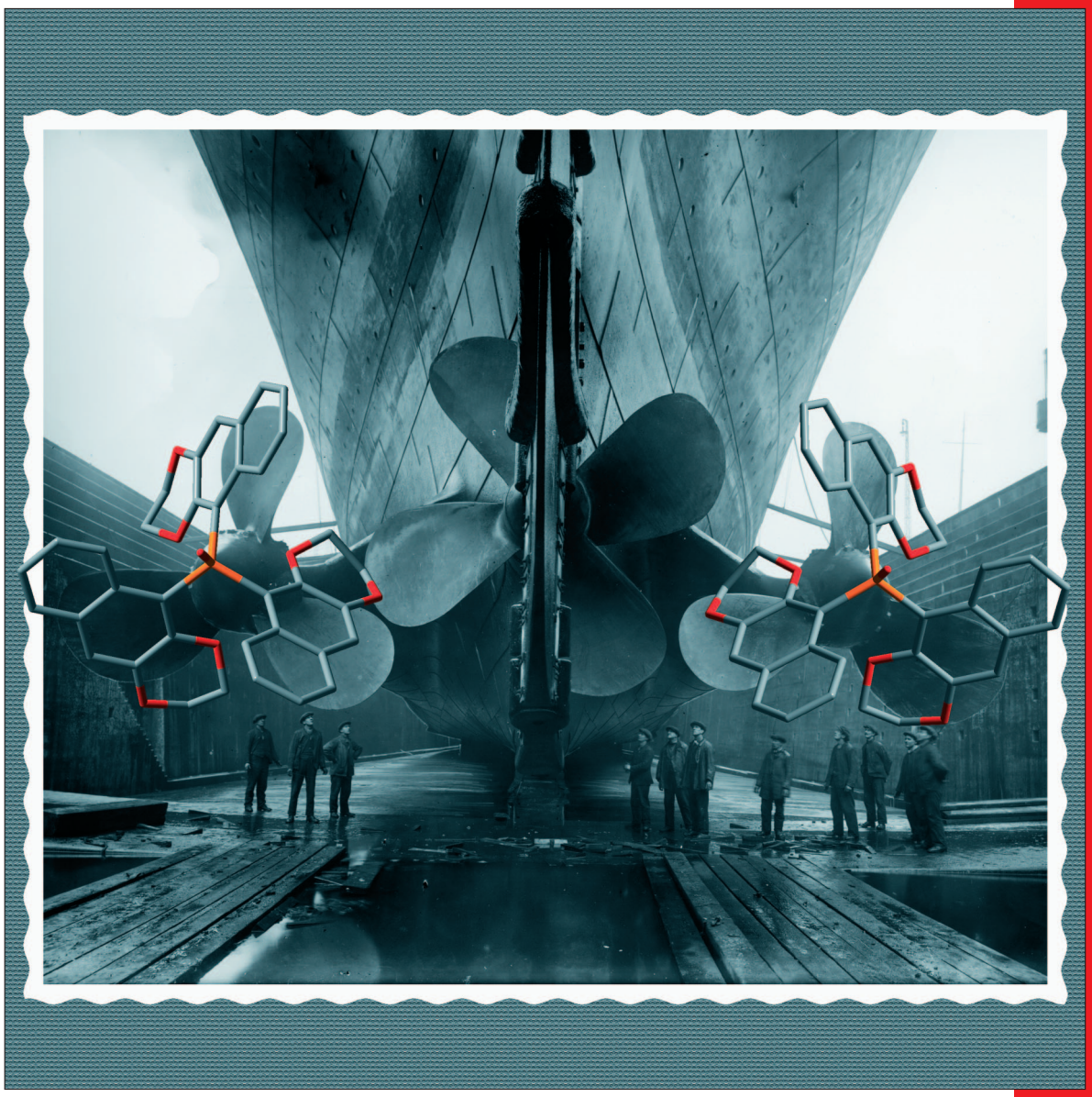

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Concept

Anion–π Slides for Transmembrane Transport

S. Matile and J. Mareda

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CEUJED 15 (1) 1–284 (2009) · ISSN 0947-6539 · Vol. 15 · No. 1 · 2009

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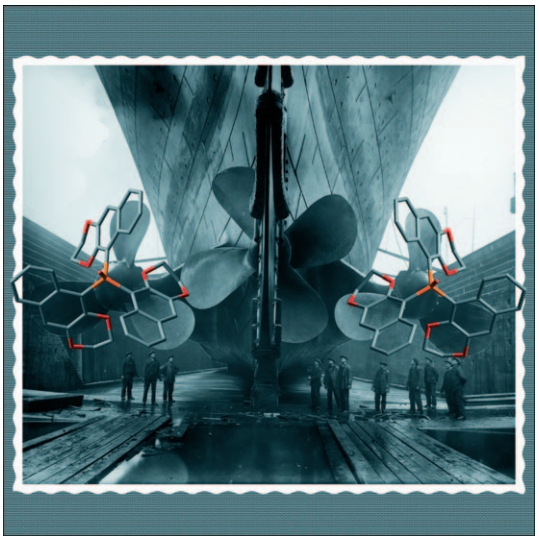
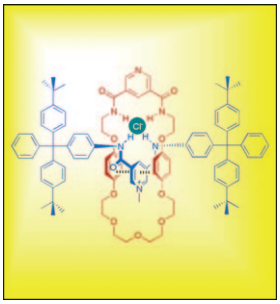
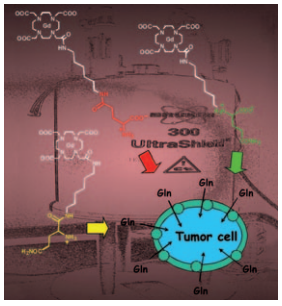
... the residual racemate of a propeller-shaped phosphine oxide and the assignment of the absolute configuration to the antipodes inspired the cover, which shows the two enantiomeric molecules superimposed on the counter-rotating wing propellers of RMS Olympic (1910), one of the two sister ships of the legendary RMS Titanic. It is a tribute to one of the greatest enterprises of the past (photo courtesy of the Department of Photography of Ulster Folk & Transport Museum, Belfast). For more details, see the Full Paper by F. Sannicoló et al. on page 86 ff.



Ion Transport
The concept of anion–π slides combines a basic research topic with the creation of supramolecular multifunctional architectures. In their Concept article on page 28 ff., S. Matile and J. Mareda discuss the general importance of selective anion recognition and translocation, and the implications this could have in many areas of research, reaching from drug discovery to diagnostics, sensing, and optoelectronic materials.

Rotaxane Chemistry
In their Communication on page 42 ff., P. D. Beer and L. M. Hancock describe the development of a new synthetic route for [2]rotaxanes. A combination of chloride anion templation and favorable π–π donor–acceptor interactions assembles flexible bis-amine acyclic precursor wheel and pyridinium axle components in such a fashion that a subsequent acid chloride condensation reaction results in rotaxane formation. By varying the acid chloride, a range of rotaxanes with interlocked cavities of variable dimensions can be prepared.





Magnetic Resonance Imaging
The delivery of imaging probes to tumor cells has been addressed in the Full Paper by S. Aime et al. on page 76 ff. by exploiting the up-regulation of transmembrane glutamine transporting systems. In fact, rapidly growing tumors require an increased and continuous supply of amino acids and other nutrients. In this work the binding and uptake properties of several Gd complexes, characterized by different conjugation modes of the glutamine moiety, have been investigated.

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