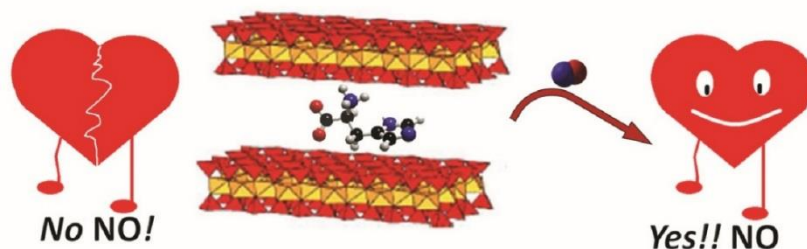


Materials for storage and slow release of therapeutic gases



L-Histidine Based Organoclays for the Storage and Release of Therapeutic Nitric Oxide

A.C. Fernandes, M.L. Pinto, F. Antunes, J. Pires
J Mater Chem B Mater Biol Med, 2015, 3, 3556-3563

Cu²⁺ and Co²⁺ Microporous Titanosilicate ETS-4 for Storage and Slow Release of Therapeutic Nitric Oxide

M.L. Pinto, A.C. Fernandes, J. Rocha, A. Ferreira, F. Antunes, J. Pires
J Mater Chem B Mater Biol Med, 2014, 2, 224-230

Slow Release of NO by Microporous Titanosilicate

M.L.Pinto, J. Rocha, J.R.B. Gomes, J. Pires
Journal of the American Chemical Society, 2011, 133, 6396-6402

Nitric oxide (NO) is a small endogenous molecule with particularly interesting effects on biological systems, despite its toxicological potential. The delivery of nitric oxide in controlled amounts to the human body is an attractive therapeutic alternative for a large number of pathologies. NO is involved in neurological functions in synaptic plasticity, neurotransmission, learning, and memory, in addition to having a primary role in non-specific immunity and platelet aggregation inhibition.

NO is a gas at room temperature and pressure, unlike more common drug molecules that are usually in a solid or liquid state. Because of the limited utility of genuine NO gas in many experimental systems and the short half-life of NO in vivo, compounds that have the capacity to release NO have been researched. More recently, nanoporous materials were explored for their ability to act as NO delivery platforms, particularly for topical applications in dermatology, wound healing, and organ conservation.