

# CrystEngComm

A monthly journal at the forefront of crystal engineering

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### Cover

See David G. Billing and Andreas Lemmerer, pp. 686–695. Hydrogen bonding interactions between the two *R*-1-phenethylammonium molecules in the asymmetric unit with two corner-shared  $\text{PbI}_6$  octahedra. Image reproduced by permission of Dr David Billing from *CrystEngComm*, 2006, **8**, 686.

## CHEMICAL TECHNOLOGY

T33

*Chemical Technology* highlights the latest applications and technological aspects of research across the chemical sciences.

# Chemical Technology

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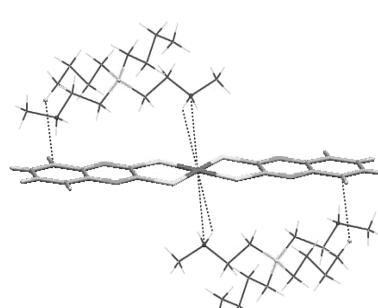
## COMMUNICATIONS

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### **[Fe(qdt)<sub>2</sub>]<sup>-</sup> salts; an undimerised Fe<sup>III</sup> bisdithiolene complex stabilised by cation interactions**

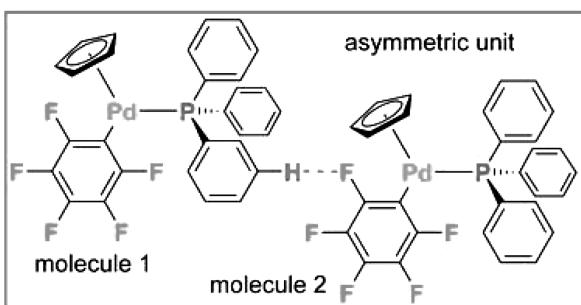
D. Simão, J. A. Ayllón, S. Rabaça, M. J. Figueira, I. C. Santos, R. T. Henriques and M. Almeida\*

(*n*-Bu)<sub>4</sub>N[Fe(qdt)<sub>2</sub>] provides the first example of an undimerised Fe<sup>III</sup> bisdithiolene complex with well isolated square planar [Fe(qdt)<sub>2</sub>]<sup>-</sup> units, which have short apical Fe···H, Fe···C and S···H contacts with the cations.



## COMMUNICATIONS

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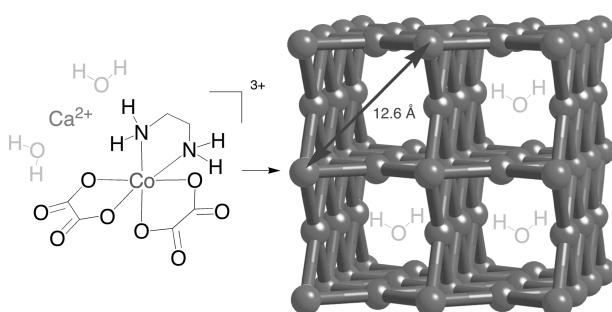


**Can a single C–H···F–C hydrogen bond make a difference? Assessing the H···F bond strength from 2-D  $^1\text{H}$ – $^{19}\text{F}$  CP/MAS NMR**

Gerhard Althoff, José Ruiz,\* Venancio Rodríguez, Gregorio López, José Pérez and Christoph Janiak\*

The above H···F contact shows the strongest  $^1\text{H}$ – $^{19}\text{F}$  dipole–dipole coupling in a 2-D CP/MAS PILGRIM NMR, thereby proving the power of 2-D solid-state NMR for assessing the strength of supramolecular contacts

666



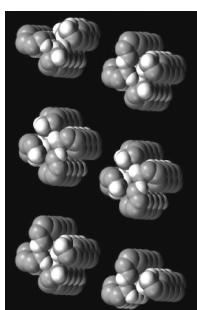
**Coordination bonds and strong hydrogen bonds giving a framework material based on a 4- and 8-connected net in  $[\text{Ca}[\text{Co}(\text{en})(\text{oxalato})_2]_2]_n$**

Cédric Borel, Mikael Häkansson and Lars Öhrström\*

The rare, high symmetry, **scu** 3D-net is an attractive synthetic target for crystal engineering and numerous isostructural materials with porous and magnetic properties based on  $[\text{M}[\text{M}'(\text{en})(\text{oxalato})_2]_2]_n$  can be envisaged.

## PAPERS

670

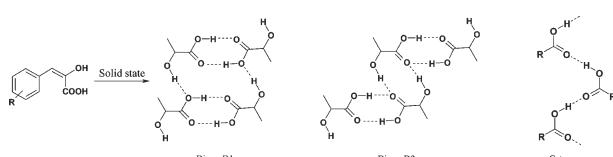


**Molecular and supramolecular structures of benzil dihydrazone, an organic helical molecule. Comparison with diacetyl dihydrazone**

Senjuti De, Shubhamoy Chowdhury, Derek A. Tocher and Dipankar Datta\*

Packing diagram of benzil dihydrazone which is a H-bonded columnar single helical supermolecule in the solid state; phenyl rings are omitted for clarity.

674



**Effects of the substituent on the formation of dimers and catemers in phenylpyruvic acids**

Dinabandhu Das and Gautam R. Desiraju\*

Pyruvic acids, in their enol forms generate one of the three alternative synthons shown here.

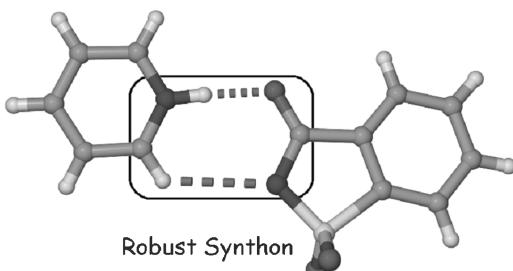
## PAPERS

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**Synthon robustness in saccharinate salts of some substituted pyridines**

Rahul Banerjee, Binoy K. Saha and Gautam R. Desiraju\*

Synthon robustness, or lack of structural interference, is a sought after goal in crystal engineering. The crystal structures of saccharinate salts **1–6** contain a new and robust supramolecular synthon, which is constructed with  $\text{N}^+ \cdots \text{H} \cdots \text{O}$  and  $\text{C} \cdots \text{H} \cdots \text{N}^-$  hydrogen bonds.

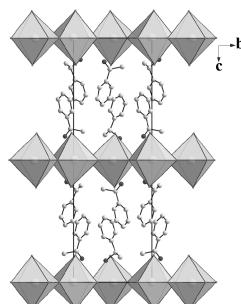


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**Synthesis and crystal structures of inorganic–organic hybrids incorporating an aromatic amine with a chiral functional group**

David G. Billing\* and Andreas Lemmerer

The first inorganic–organic hybrids containing an aromatic amine with a chiral centre have been crystallized and structurally characterized.

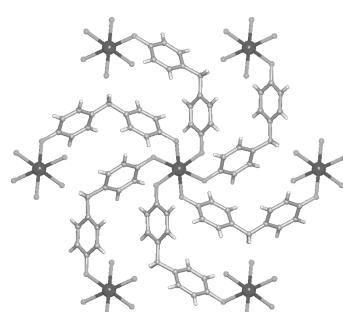


696

**New metal–organic frameworks and supramolecular arrays assembled with the bent ditopic ligand 4,4'-diaminodiphenylmethane**

Lucia Carlucci, Gianfranco Ciani,\* Davide M. Proserpio and Francesca Porta

A variety of coordination polymers and supramolecular arrays have been characterized from the reaction of 4,4'-diaminodiphenylmethane (dadpm) and different metal salts. Particular intriguing are the 3-D networks with **ths** ( $\text{ThSi}_2$ ), **cds** ( $\text{CdSO}_4$ ) and **pcu** ( $\alpha\text{-Po}$ ) topologies.

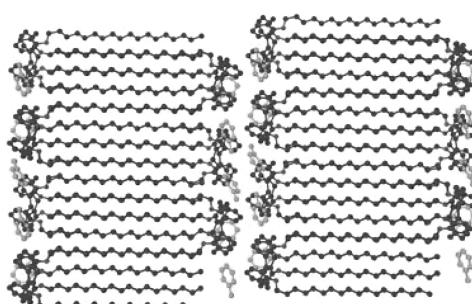


707

**Supersized bilayers based on an *O*-alkyl substituted calix[4]arene**

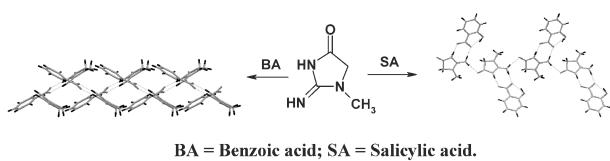
Thomas E. Clark, Mohamed Makha, Colin L. Raston\* and Alexandre N. Sobolev

Structural elucidation of the toluene and benzene inclusion complexes of tetra-*O*-octadecyl-calix[4]arene revealed unprecedented hexagonal motif interplay of the alkyl chains within the bilayer arrangement.



## PAPERS

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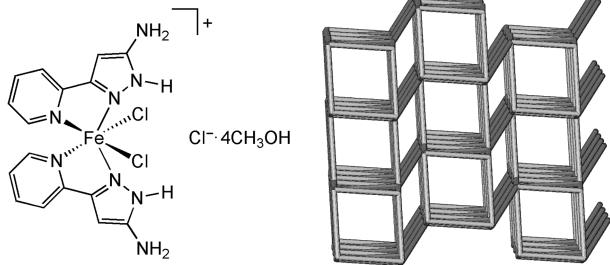
BA = Benzoic acid; SA = Salicylic acid.

**Recognition of creatinine by weak aromatic acids in solid phase along with their supramolecular network**

Shyamaprosad Goswami,\* Subrata Jana, Anita Hazra, Hoong-Kun Fun, Shazia Anjum and Atta-ur-Rahman

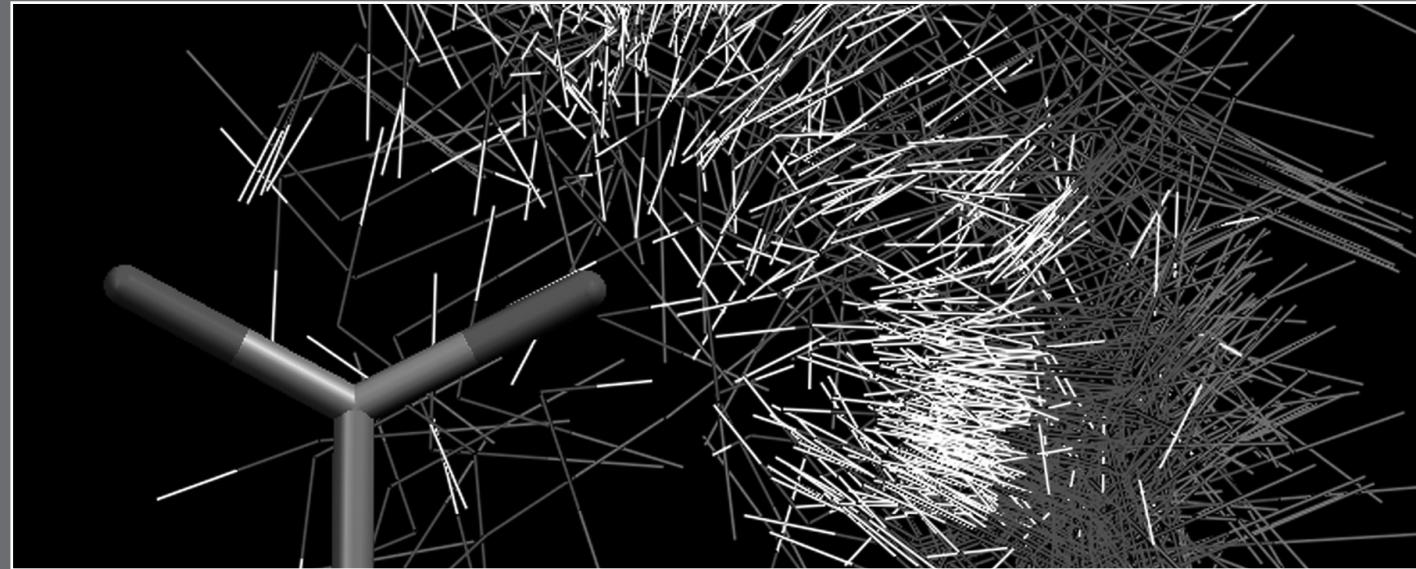
Two 1 : 1 complexes of creatinine with benzoic acid and salicylic acid have been reported which show interesting hydrogen bonding features in their supramolecular networks involving proton transfer rather simple molecular complexes.

719


**Novel hydrogen bond network topologies in complexes of the ditopic ligand 5-amino-3-(pyrid-2-yl)-1*H*-pyrazole**

Leigh F. Jones, Kenneth D. Camm, Colin A. Kilner and Malcolm A. Halcrow\*

Simple metal complexes of the title ligand show a wide variety of hydrogen-bond network topologies in the crystal. For example, the compound shown forms a hydrogen-bond structure that is best understood as a heavily modified form of the boron nitride framework.



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