

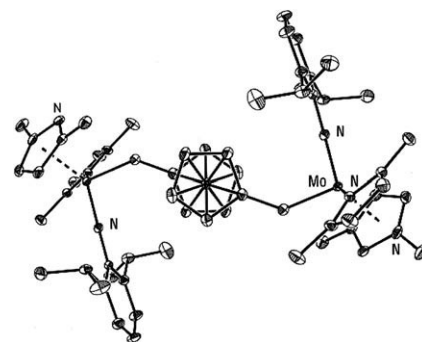
## Bifunctional Complexes

A. J. Gabert, R. R. Schrock,\*  
P. Müller

**Synthesis of Bifunctional Imido Alkylidene Bis Pyrrolide Complexes of Molybdenum and Their Conversion into Bifunctional Imido Alkylidene Diolate Complexes That Can Be Employed as ROMP Initiators**

*Chem. Asian J.*  
DOI: 10.1002/asia.200800076

A “bifunctional” approach to triblocks has been employed in order to synthesize triblocks from monomers that are prone to ring-opening metathesis polymerization (ROMP). The synthesis of three pyrrolide complexes and the reaction of these complexes with various chiral diols is reported and shows that bifunctional diolate complexes may be employed as initiators for ROMP.



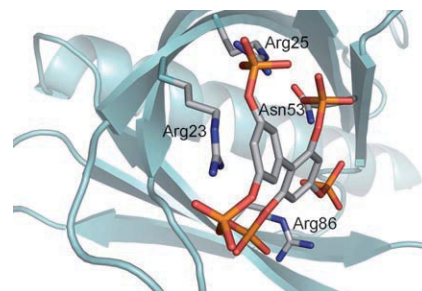
## Cell Signalling

S. J. Mills, F. Vandeput,  
M. N. Trusselle, S. T. Safrany,  
C. Erneux, B. V. L. Potter\*

**Benzene Polyphosphates as Tools for Cell Signalling: Inhibition of Inositol 1,4,5-Trisphosphate 5-Phosphatase and Interaction with the PH Domain of Protein Kinase B $\alpha$**

*ChemBioChem*  
DOI: 10.1002/cbic.200800104

**Benzene polyphosphates**, which are emerging as new cell signalling tools, were synthesised and evaluated as inhibitors of type I Ins(1,4,5)P<sub>3</sub> 5-phosphatase and of the pleckstrin homology (PH) domain of protein kinase B $\alpha$  (PKB $\alpha$ ). Biphenyl 2,3',4,5',6-pentakisphosphate exhibits a low nanomolar  $K_i$  value at the PH domain of PKB $\alpha$ .



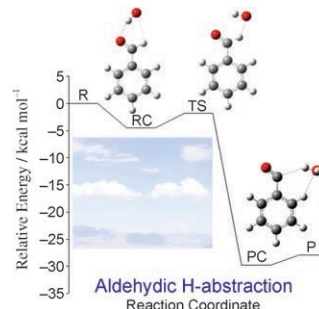
## Atmospheric Chemistry

C. Iuga, A. Galano, A. Vivier-Bunge\*

**Theoretical Investigation of the OH-Initiated Oxidation of Benzaldehyde in the Troposphere**

*ChemPhysChem*  
DOI: 10.1002/cphc.200800144

**Aldehydic abstraction dominates:** A mechanistic and kinetic study of the OH-initiated oxidation of benzaldehyde is carried out using quantum chemical methods and classical transition state theory. The aldehydic abstraction is the most important reaction channel within the entire range of temperatures studied (see graphic), especially at the temperatures relevant to atmospheric chemistry.

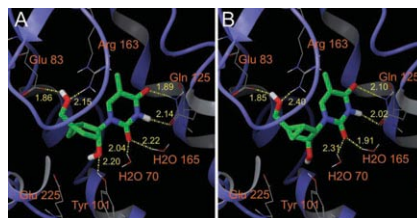


## Asymmetric Synthesis

M. J. Comin, B. C. Vu, P. L. Boyer,  
C. Liao, S. H. Hughes, V. E. Marquez\*

**D-(+)-*iso*-Methanocarbothymidine: a High-Affinity Substrate for Herpes Simplex Virus 1 Thymidine Kinase**

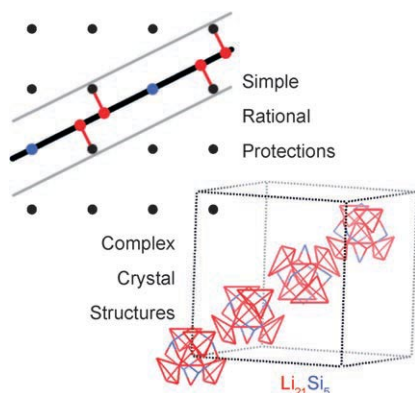
*ChemMedChem*  
DOI: 10.1002/cmdc.200800027



**Herpes thymidine kinase** recognizes exclusively the (+)-D enantiomer of racemic *iso*-methanocarbothymidine (*iso*-MCT). This was shown after achieving the stereoselective syntheses of both (+)-D and (–)-L enantiomers of the active racemate. The bicyclo-[3.1.0]hexane scaffold seems to provide an optimal combination of sugar pucker, nucleobase orientation, and disposition of hydroxy groups for efficient substrate activity.

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### Quasicrystals



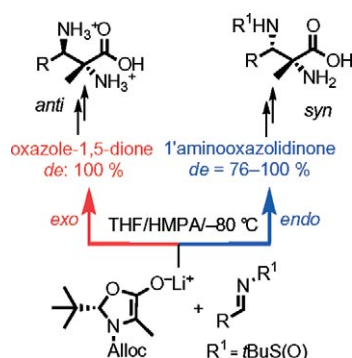
**Parallel structure:** Several complex cubic crystal structures of varying size and complexity (including  $\text{Li}_{21}\text{Si}_5$ , lower right) are shown to be rational projections of the same higher dimensional crystal lattice (schematic, upper left). This suggests the possible existence of a parent quasicrystal—one with perpendicular pseudo fivefold axes—which has never been observed.

R. F. Berger, S. Lee,\* J. Johnson,  
B. Nebgen, A. C.-Y. So

**Laves Phases,  $\gamma$ -brass, and  $2 \times 2 \times 2$  Superstructures: A New Class of Quasicrystal Approximants and the Suggestion of a New Quasicrystal**

*Chem. Eur. J.*  
DOI: 10.1002/chem.200800336

### $\alpha^{2,2},\beta^3$ -Diamino Acids



Chiral  $\alpha^{2,2},\beta^3$ -diamino acids were synthesized by double stereinduction reactions of chiral oxazolidinone enolates with *N*-sulfinyl aldimines. Among a variety of highly functionalized diamino acids, this highly diastereoselective protocol provides a synthetic route for yet unreported *C*-glycosyl and  $\alpha$ -nucleoside diamino acids.

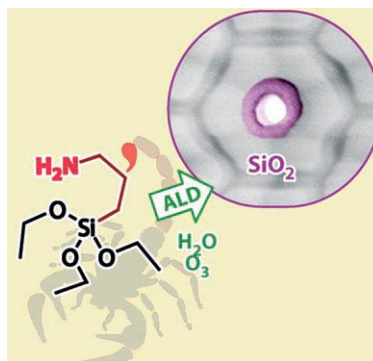
A. Guerrini,\* G. Varchi,\* C. Samorì,  
A. Battaglia

**Synthesis of  $\alpha^{2,2},\beta^3$ -Diamino Acids by Double Stereodifferentiation Aldol Addition of Oxazolidinone Enolates to *N*-(*tert*-Butylsulfinyl) Imines**

*Eur. J. Org. Chem.*  
DOI: 10.1002/ejoc.200800356

### Thin $\text{SiO}_2$ Films

**Molecular self-attack:** According to mythology, a scorpion may sting itself to death; similarly, 3-aminopropyltriethoxysilane catalyzes its own hydrolysis in the atomic layer deposition (ALD) of  $\text{SiO}_2$  thin films and nanostructures. Between 120 and 200 °C, the growth rate is constant at 0.06 nm per ALD cycle. The  $\text{SiO}_2$  films are chemically and optically pure.  $\text{SiO}_2$  nanotubes of aspect ratio 500 exhibit smooth walls of accurately controlled thickness.

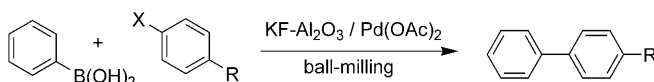


J. Bachmann,\* R. Zierold,  
Y. T. Chong, R. Hauert, C. Sturm,  
R. Schmidt-Grund, B. Rheinländer,  
M. Grundmann, U. Gösele,  
K. Nielsch\*

**A Practical, Self-Catalytic, Atomic Layer Deposition of Silicon Dioxide**

*Angew. Chem. Int. Ed.*  
DOI: 10.1002/anie.200800245

### Solid-State Reactions



**Run of the 'mill':** An inorganic support ( $\text{KF-Al}_2\text{O}_3$ ) was used to generate the base in situ for Suzuki reactions carried out using mechanochemical treatment in a ball mill. Various aryl halides

were tested in the Pd-catalyzed coupling reaction with phenylboronic acid and  $\text{KF-Al}_2\text{O}_3$ . The best results were obtained with aryl bromides.

F. Schneider, B. Ondruschka\*

**Mechanochemical Solid-State Suzuki Reactions Using an In Situ Generated Base**

*ChemSusChem*  
DOI: 10.1002/cssc.200800086



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