# CORNFORTH REARRANGEMENT

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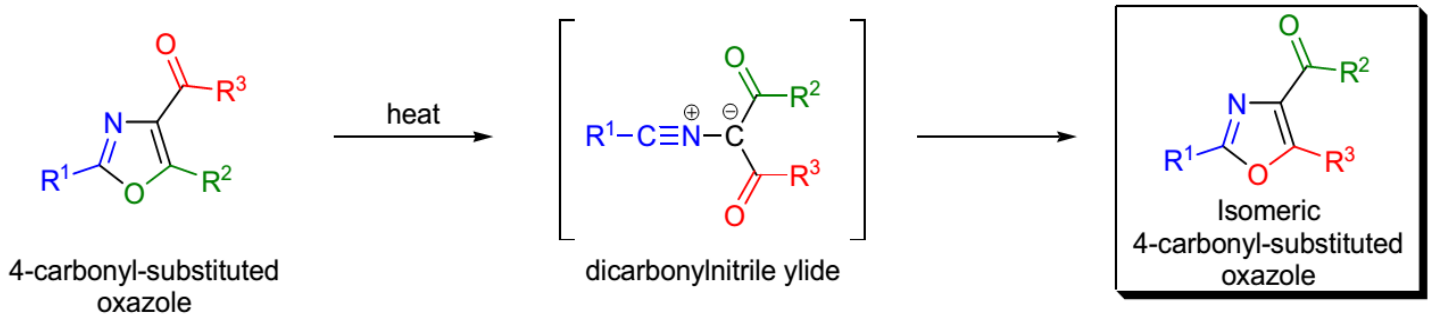
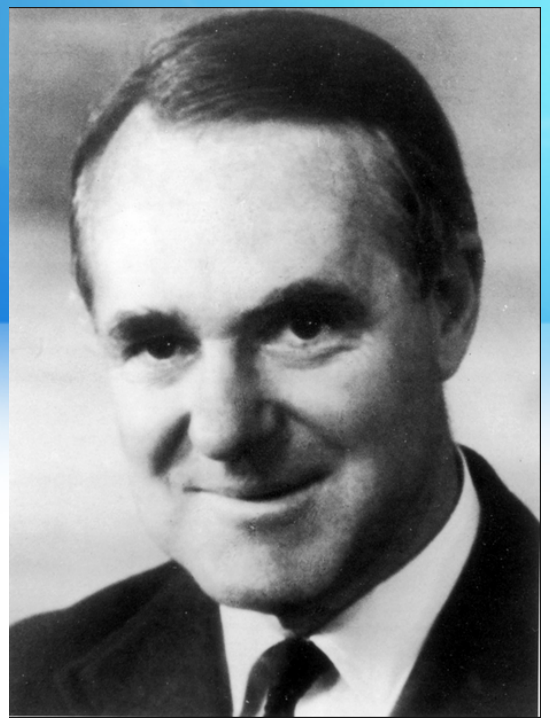
- The thermal rearrangement of 4-carbonyl substituted oxazoles to their isomeric oxazoles is known as the Cornforth rearrangement.
- First observed by John Warcup Cornforth，1949.

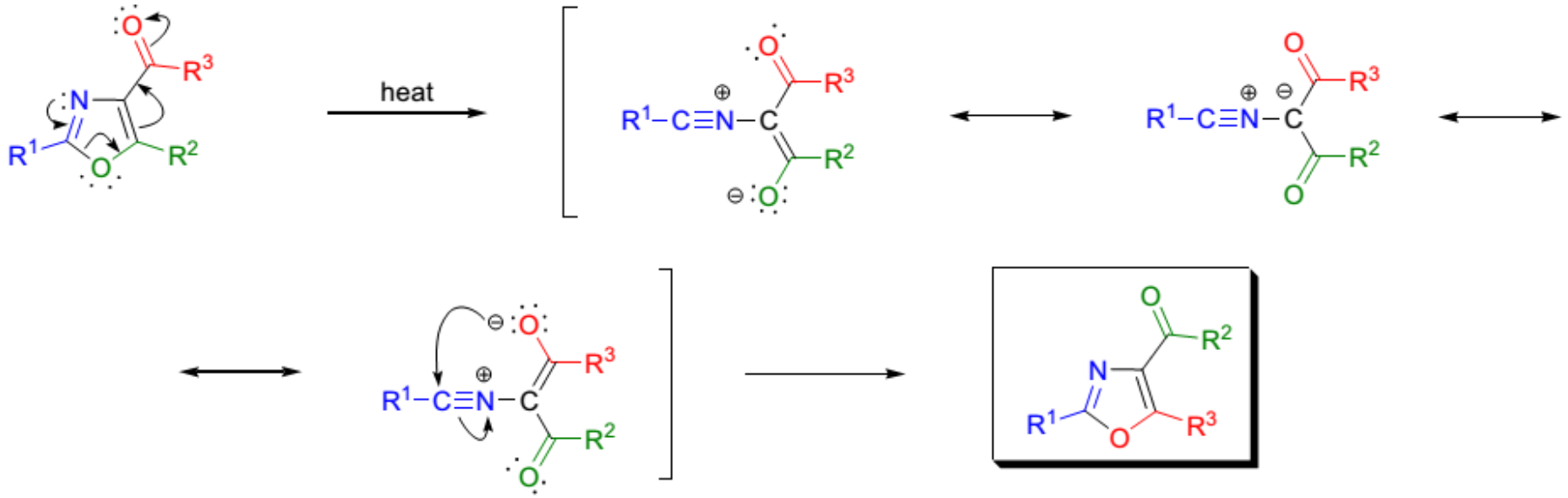




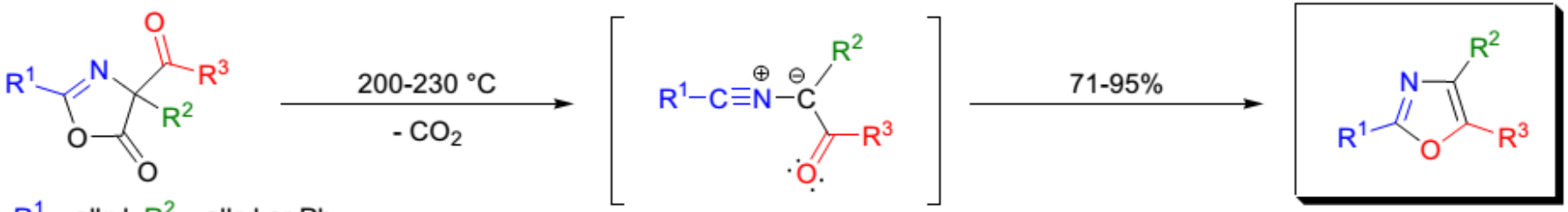
Sir John Cornforth

Sir John Warcup "Kappa" Cornforth, (7 September 1917 – 8 December 2013), was an Australian–British chemist who won the Nobel Prize in Chemistry in 1975 for his work on the stereochemistry of enzyme-catalysed reactions.

# Mechanism:



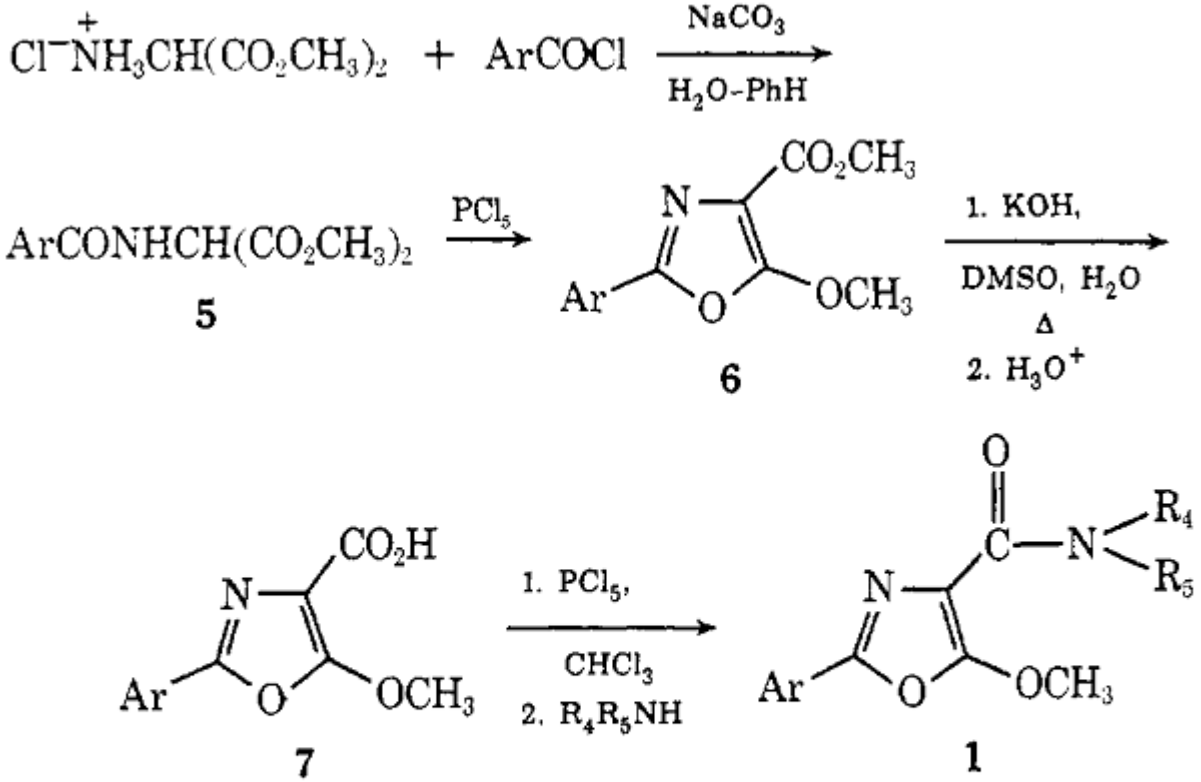

Preparation of carbonylnitrile ylide:




$R^1$ = alkyl, $R^2$ = alkyl or Ph
$R^3$ = Ph, Me, OMe, $CO_2Et$

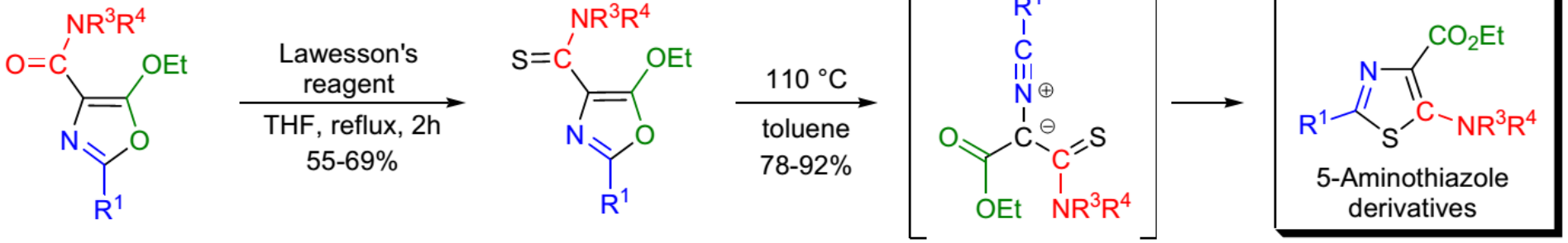
carbonylnitrile ylide

# The synthesis of starting oxazoles

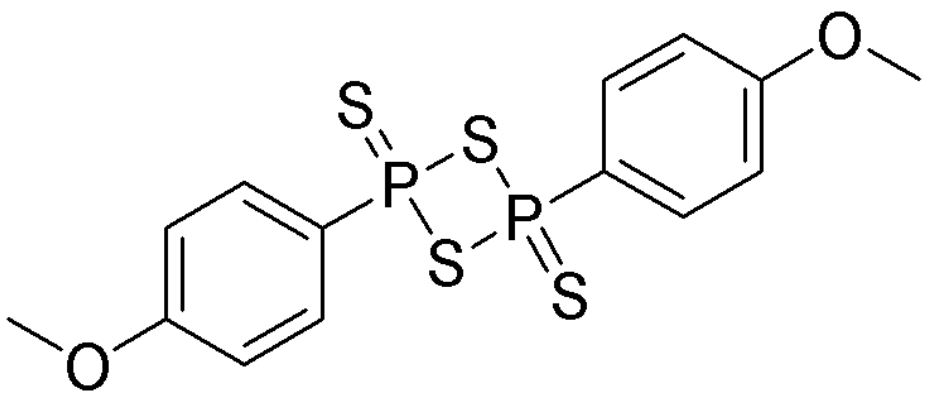



**5–7**, **a**, Ar = *p*-$CH_3O$Ph
**b**, Ar = *p*-$CH_3$Ph
**c**, Ar = *p*-*t*-BuPh
**d**, Ar = Ph
**e**, Ar = *p*-FPh
**f**, Ar = *p*-BrPh
**g**, Ar = *m*-BrPh
**h**, Ar = *p*-$CF_3$Ph

# Synthetic Applications:




Lawesson's reagent



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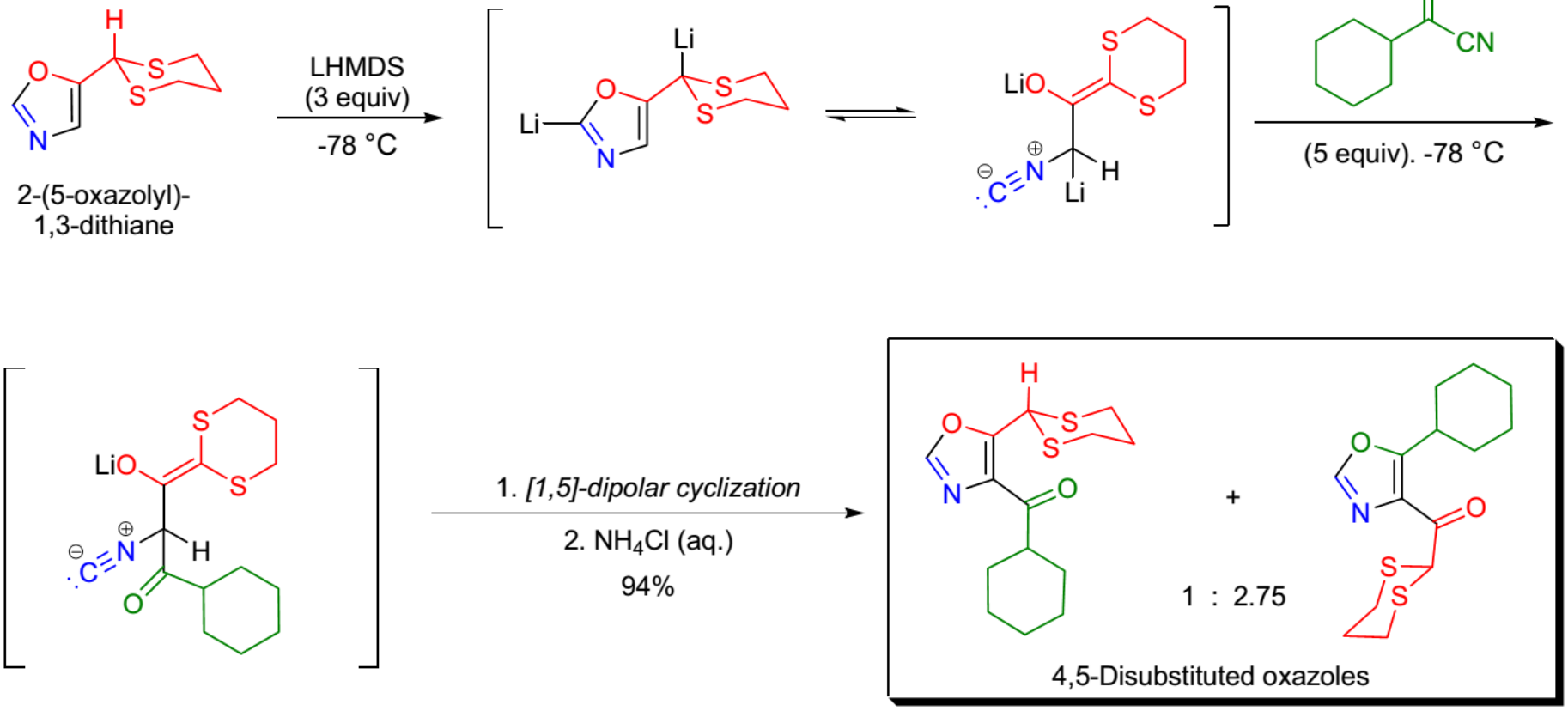

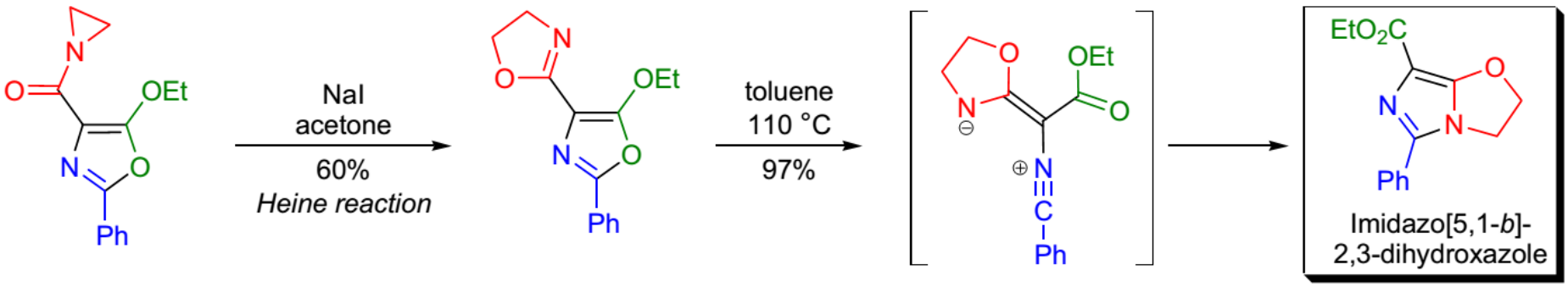


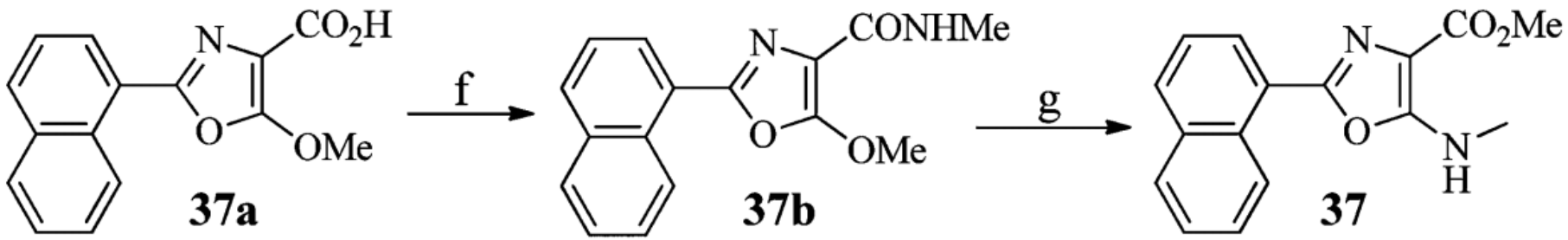


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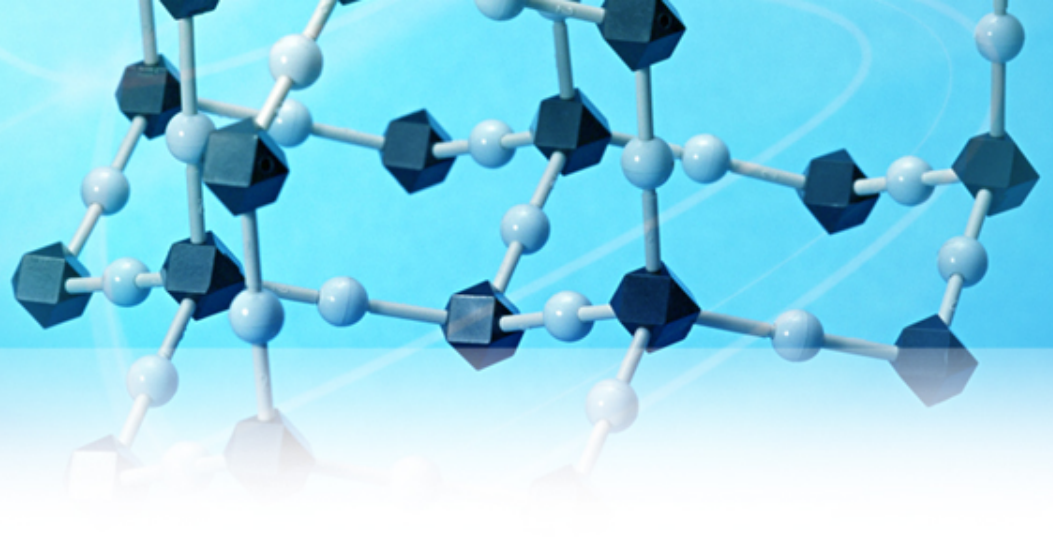

Thank you