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ไครัลซิฟเบสชนิดใหม่

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**SYNTHESIS OF  $\alpha$ -AMINONITRILE USING NOVEL  
CHIRAL SCHIFF BASE CATALYSTS**

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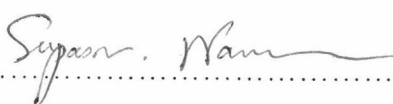
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จุฬาลงกรณ์มหาวิทยาลัย

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A catalytic enantioselective Strecker synthesis using a variety of novel chiral catalysts including polymeric schiff bases, chiral Schiff bases derived from chiral aminoalcohols, as well as Schiff base derived from optically active amino acid and their metal complexes is described. Reactions of *N*-benzylidenebenzylamine with hydrogen cyanide or trimethylsilyl cyanide in the presence of such catalyts gave  $\alpha$ -aminonitrile in good to excellent yield, with different degrees of enantioselectivity. The Ti and Mn complexes of polymeric salen gave enantiomeric excess in the range of 0-3%. The complexes of Schiff base-amino alcohol resulted in 0-12% *ee*. The reactions where Ti or Mn complexes of chiral amino acids were employed gave up to 40% *ee*. The differences in the observed enantioselectivities were highly dependent on the structure of the catalysts. Other factors affecting the enantioselectivities including the cyanide source and the temperature have also been studied.

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## List of Abbreviations

|                   |                       |      |                               |
|-------------------|-----------------------|------|-------------------------------|
| Å                 | angstrom              | min  | minute                        |
| br                | broad                 | mL   | milliliter (s)                |
| °C                | degree celsius        | mmol | millimole                     |
| CDCl <sub>3</sub> | deuterated chloroform | mp   | melting point                 |
| cm <sup>-1</sup>  | unit of wave number   | NMR  | nuclear magnetic<br>resonance |
| d                 | doublet (NMR)         | OAc  | acetate                       |
| dec               | decomposed            | OTf  | triflate                      |
| <i>ee</i>         | enantiomeric excess   | Ph   | phenyl                        |
| eq                | equivalent            | ppm  | part per million              |
| Fig               | Figure                | q    | quartet (NMR)                 |
| g                 | gram (s)              | RNA  | ribonucleic acid              |
| h                 | hour (s)              | rt   | room temperature              |
| Hz                | hertz                 | s    | singlet (NMR)                 |
| IR                | infrared              | μL   | microliter                    |
| <i>J</i>          | coupling constant     | μm   | micrometer                    |
| lit               | literature            | δ    | chemical shift                |
| m                 | multiplet (NMR)       | %    | percent                       |

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