

RSC Speciality Chemicals Symposium 2009: Catalysts for Change

Enabling Catalysis in the Pharmaceutical Industry with High Throughput Screening (HTS)

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Homogeneous catalysis, both chiral and achiral, can provide powerful chemical shortcuts that result in short synthetic sequences and low costs of goods for the manufacture of pharmaceuticals. However, as the promise of these catalytic technologies has grown, so have the numbers of industrially viable ligands and catalysts that are available to researchers. A ligand or a catalyst must be discovered from screening among hundreds of choices to fit to each individual catalytic step. High throughput screening (HTS) as a substitute for classical singleton or parallel reaction techniques provides an advantage to finding leads quickly with little manpower. High throughput screening will be presented as an applied science with critical success factors discussed such as equipment, personnel, ligand/catalyst library, workflow, and know-how. Furthermore, several key examples demonstrating this powerful technique will be discussed with a focus on industrially popular asymmetric hydrogenation and C-N coupling.