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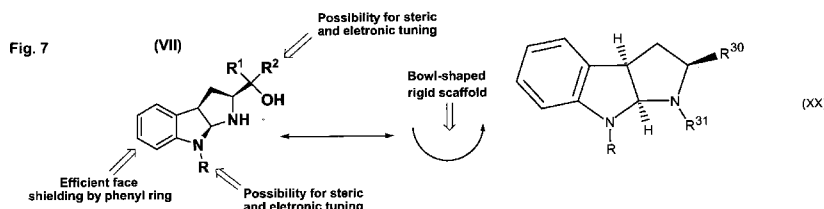
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(54) Title: NOVEL TRICYCLIC CHIRAL COMPOUNDS AND THEIR USE IN ASYMMETRIC CATALYSIS



(57) Abstract: The present invention relates to a compound of general Formula Formula (XX), its formation and its use in asymmetric catalysis. In Formula (XX) R and R³¹ are independently -COOR³, -R⁴COOR³, -R⁴CHO, -R⁴COR³, -R⁴CONR⁵R⁶, -R⁴COX, -R⁴OP(=O)(OH)₂, -R⁴P(=O)(OH)₂, -R⁴C(O)C(R³)CR⁵R⁶ and -R⁴CO₂COR³. In addition, R³¹ may also be hydrogen. R³, R⁵ and R⁶ are independently hydrogen, an aliphatic group with a main chain having 1 to about 20 carbon atoms, an alicyclic group, an aromatic group, an arylaliphatic group or an arylalicyclic group, comprising 0 to about 3 heteroatoms independently selected from the group consisting of N, O, S, Se and Si. R⁴ an aliphatic bridge with a main chain having 1 to about 20 carbon atoms, an alicyclic bridge, an aromatic bridge, an arylaliphatic bridge or an arylalicyclic bridge, comprising 0 to about 3 heteroatoms independently selected from the group consisting of N, O, S, Se and Si, and X is halogen. In Formula (XX) R³⁰ is -C(OH)R¹R² or -COOR¹⁴, wherein R¹, R² and R¹⁴ are independently hydrogen, an aliphatic group with a main chain having 1 to about 20 carbon atoms, an alicyclic group, an aromatic group, an arylaliphatic group or an arylalicyclic group, comprising 0 to about 3 heteroatoms independently selected from the group consisting of N, O, S, Se and Si.