

ABSTRACTS

12: Balogh, Sz.; Farkas, G.; Szöllősy, Á.; Darvas, F.; Üрге, L.; Bakos, J., Fine tuning of the structure of phosphine–phosphoramidites: application for rhodium-catalyzed asymmetric hydrogenations *Tetrahedron: Asymmetry*, 24 (2013) 66-74.

Diastereomers of (4-(diphenylphosphino)pentan-2-yl)-N-isopropyl-{dinaphtho[2,1-d:10,20-f][1,3,2]dioxaphosphepin-2-yl}-4-amine, (*S*)-(2*S*,4*S*)-1, and (*S*)-(2*R*,4*R*)-3; the octahydro derivative 4 of (*S*)-(2*S*,4*S*)-1, and derivative 2 of (*S*)-(2*S*,4*S*)-1 containing a 1,3-propanediyl backbone, have been synthesized and used for rhodium-catalyzed asymmetric hydrogenations of prochiral olefins in order to study the role of the stereogenic elements in the backbone and in the terminal moiety. The central chirality in the bridge has been found to determine the configuration of the product with a cooperative effect from the terminal groups. Excellent *ee*'s (up to 99.9%) were obtained in the hydrogenation of methyl (*Z*)- α -acetamidocinnamate using a rhodium complex with the matched arrangement (*S*)-(2*S*,4*S*)-1. The hydrogenation is accomplished in a highly enantioselective manner by using green solvents such as propylene carbonate.