

Natarajan, B.; Jayaraman, N., 2011, "Increased catalytic efficiencies of multivalent dendritic catalysts. Synthesis and studies of Rh(I) catalysts within and across poly(alkyl aryl ether) dendrimers" *J. Organomet. Chem.*, 696, 722 – 730.

This manuscript pertains to a study of the efficacies of multivalent dendritic catalysts, in relation to the number of catalytic moieties present at the peripheries of dendrimer generations. Studies were undertaken using poly(alkyl aryl ether) dendrimers, the peripheries of which were incorporated with varying number of catalytic moieties. Generations zero to three, presenting 3 to 24 peripheral functionalities, were utilized to prepare 12 catalysts, having multiple Ph<sub>3</sub>P-Rh(Cl)(cod) catalytic moieties. Upon synthesis, the catalysts were tested in the case of hydrogenation of styrene and monitored by GC technique. A comparative analysis of studies showed that an individual catalytic unit was far more effective when it was present in fully and mostly catalytic unit incorporated multivalent catalysts than least number of unit incorporated catalysts. The studies thereby uncover beneficial effects of clustering multiple catalytic units at dendrimer peripheries.