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CONFERENCIAS
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IIth International Symposium on Homogeneous Catalysis

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From September 3 till 7, 2002 in Tarragona (Spain) took place the 13th International Symposium on Homogeneous Catalysis attended by about 500 participants. The Symposium is very popular for it is attended on equal terms by chemists interested in inorganic, organic, and catalytic processes. A large number of countries on all inhabited continents compete for the right to host the Symposium. Regretfully, our country is poorly represented on these Symposia although many authors without attendance just publish their abstracts. However the analysis of the material presented on the Symposium can be interesting for many scientists, among them also those working in the fields of fine organic synthesis, polymerization, hydrogenation, and oxidation.

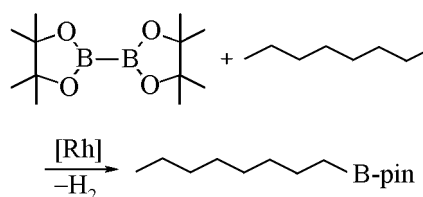
On the Symposium were presented 14 plenary lectures, 10 section lectures dedicated to jubilee of Professor B.R.James, permanent Secretary of the Scientific Council of the Symposium, 14 oral reports, and over 300 posters. Naturally, a special place in works demonstrated on the Symposium took the problem of the synthesis of new catalysts, a development of efficient and fitting to the requirements of the "green chemistry" catalytic systems for various reactions.

Just this problem was treated in the lecture of M. Beller (Germany) where were demonstrated the opportunities provided by simple systems based on palladium with phosphite ligands for reactions of cross-coupling, cyanation, carbonylation, olefination, etc., among them also reactions with aryl chlorides as substrates.

The lecture of A.S.Chan (Honkong, China) concerned the synthesis of new chiral rhodium and ruthenium complexes based on pyridylphosphine ligands that turned out to be efficient catalysts of asymmetrical hydrogenation. The importance of the asymmetrical hydrogenation of ketoesters as the key stage in the synthesis of such drugs as xencal was demonstrated in the lecture of M. Salone (Hoffman-la-Roche, Switzerland). The subject of the lecture of Feringa (the Netherlands) was the application of

chiral monodentate phosphinamides as ligands in catalysis with transition metal complexes of versatile processes, for instance, 1,4-addition, Heck reaction etc.; he also discussed the opportunities of chirality screening. Much interest attracted the lecture of J.W.Hartwig (USA) whose works always contain novel ideas. In extension of his studies on hydroamination of vinylarenes catalyzed by palladium complexes he carried out this process in an enantioselective mode. For special attention called reported by him new functionalization reaction for olefins, arenes, and even alkanes effected by bis-pinacolyldiborane under catalysis with rhodium and iridium complexes.

Scheme.



Problem of catalyst recycling in the hydroformylation reaction at the use of dendrimeric catalysts, fluorinated two-phase systems or two-phase systems composed of a supercritical and ionic liquids was treated in the lecture of D.J.Cole-Hamilton *et al.* (United Kingdom). The role of homogeneous catalysis in solution of the "green chemistry" problems was the subject of lecture read by I.T.Horvath (Hungary): the problems of catalyst designing possessing high activity and selectivity, of separation of reaction products and catalyst were discussed. The homogeneous catalysis grows in importance in production of fine chemicals, among them of pharmaceuticals. In the lecture of E.E.Bunel (Eli Lilly and Company, USA) were demonstrated examples of application of so important processes as asymmetrical hydrogenation, carbon-carbon bond formation, creation of new ligands for industrial application of these processes.

Several lectures concerned polymerization processes, in particular on the lanthanides-containing catalysts (A. Mortreux, France), olefins polymerization on titanium and zirconium complexes, also with the use of asymmetrical ligands (P. Poyolal, Spain), polyketones synthesis by Pd-catalyzed copolymerization of CO with styrenes (B. Milari, Italy).

The application of transition metal complexes, e.g, hydrides $\text{RuH}_2(\text{PPh}_3)$, $\text{RhH}(\text{PPh}_3)_3$, $\text{IrH}(\text{PPh}_3)_2$, as

ambiphilic catalysts (Lewis acids and bases) in Michael reactions and aldol condensation was considered in the lecture of S.-I. Murahashi (Japan). M. Tanaka and J. Hatanaka (Japan) reported on the use of a pentacoordinate cationic silicon salt as a strongest Lewis acid in Mukoyami reaction. Just this list of topics shows that all happening in the homogeneous catalysis is directly related to the organic chemistry.