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CONFERENCE

11th IUPAC Symposium "Organometallic Chemistry Applied to Organic Synthesis"

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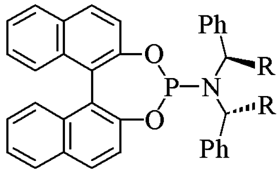
On July 22–26 2001 in Taipei (Taiwan) took place the 11th Symposium OMCOS with 800 participants from 32 countries. IUPAC should be congratulated to have initiated these encounters 20 years ago. Since that time every two years a great number of scientists working in the field of organic synthesis and using organometallic compounds as reagents and catalysts meet to attend OMCOS. And every two years the participants observe a fantastic progress in this field.

The apprehensions of the organizers that Taipei would be too long a way to travel for many scientists working in the field luckily did not come true. Thanks to the funding by a great number of sponsors that were recruited by the Organizing Committee the conference fee for the young scientists was very small, and the Symposium was attended by young generation of scientists not only from Asia but also from Europe and the USA. Generally speaking, before discussing the scientific matters, I would like to mention the way the OMCOS-11 was organized. The organization was superb: Professor T.I. Luh and domestic Organizing Committee foresaw all particularities. All the existing traditions were conserved, the atmosphere of the meeting was friendly, but this was supplemented by the trends of the new century: highest efficiency, well-defined time-limit, faultless operation of the whole mechanism.

The conference was opened by lectures delivered by two classics of organometallic chemistry. Professor F. A. Cotton on occasion of the 50th anniversary of ferrocene discovery told the breathtaking story of establishing its structure; since he had worked at this time in the Harvard laboratory of Professor G. Wilkinson, he had taken a direct part in the event. In the lecture of Professor A.Yamamoto besides the historic reminiscences concerning the studies on oxidative addition of organyl halides to nickel complexes contained new data on cleavage of C–O bond under the action of complexes that constituted a part of his project for making the chemistry "greener".

At the conference were delivered five plenary lectures on versatile problems. Professor B.L. Feringa reported on design of new chiral ligands for asymmetric synthesis, one among the most vital topics in the modern organic synthesis. As a model reaction was considered the 1,4-addition of organometallic compounds, and as easily modified ligand depending on P character was taken the phosphoamidate.



This topic was carried on in the invited lecture of Professor A. Alexakis.

Professor S.-I. Murahashi reported on his discovery that low-valence ruthenium hydrides could operate as excellent Lewis acids providing a possibility to carry out condensation processes under neutral conditions avoiding formation of salt wastes. In nitrile reactions was revealed an ability of these complexes to provide activation in two fashions: by activation of a C–H bond or C–N activation. As a result formed different products.

A catalysis with metal complexes in preparation of biologically active molecules important for medicine was demonstrated in the lecture of Professor P. A. Wender who used nickel and rhodium complexes to catalyze cyclization processes affording seven-membered rings.

Professor P. Knochel dedicated his lecture to his new procedure for preparation of the functionalized organomagnesium and organozinc compounds, and to their application to the organic synthesis, in particular to asymmetric synthesis. A considerable progress in the olefin metathesis was demonstrated in the lecture of Professor R.H.Grubbs who had initiated vigorous development of this field. By modification of his catalyst he is capable not only to synthesize complex macrocycles but also perform stereoselective prepara-

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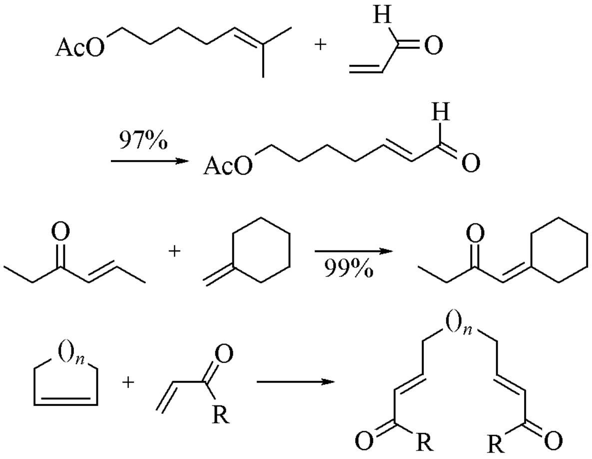
tion of carbonyl compounds by cross-metathesis with terminal olefins involving ROM (*selective ring-opening cross-metathesis*). Thus a product of Heck reaction was obtained, and a reaction between unsaturated aldehyde and trisubstituted alkene was carried out.



Among 19 invited lectures not all contained equally valuable material but together they undoubtedly reflected the most important processes in this field of chemistry. To these reports belong that of Y. Montgomery on the nickel-catalyzed cyclizations of alkynyl enones and alkynyl enals;

of E.-I. Negishi on building up of the carbon skeleton by Zr-catalyzed carbometallation followed by Pd-catalyzed cross-coupling;

of H.-U. Ressig on application of metallated methoxyallene as synthon for the stereoselective synthesis of heterocycles;

of E. Keinan on oxidative polycyclization under the action of Re(VII) oxides providing polyoxygenated carbon skeleton with multiple stereogenic sites that is interesting for both preparation of natural products and analogs thereof with a wide range of biological activity;

of I. Ojima on extremely interesting new cyclization processes including cyclocarbonylation and silaformylation, and on the use thereof in the synthesis of biologically significant molecules;

of M. Catellani on formation of intricate aromatic molecule as a result of reaction between norbornene, aryl iodide, and Pd(0);

of C.-H. Cheng on nickel-catalyzed cycloaddition reactions and reductive dimerization of bicycloalkenes with alkynes;

of G.-P. Genet on application of new ruthenium catalysts with chiral ligands in the asymmetric hydrogenation;

of N. Jeong on the use of various rhodium catalysts in the Pausan–Khand reaction and on the theoretical investigation of the reaction mechanism and stereoselectivity;

of A. Krief on the application of selenium oxides as cooxidizers in the asymmetric dehydrosilylation by Sharpless;

of K. Narasaka on the use of O-sulfenyloximes as aminating agents in Pd-catalyzed reactions;

of H. Butenshon on preparation of highly substituted polycycles with the use of arene chromium carbonyl complexes containing fused functionally-substituted rings;

of L. S. Liebkind on activation with Pd, Cu,and Fe complexes of C–S bond in the thioorganic compounds; communication on new addition reactions of $Me_3SN–CONR_2$, Cl–COOR, PhS–COOR to triple bonds catalyzed by Rh, Ni, and PD complexes.

Numerous short communications by the topics and even by the level of the content frequently were no worse than the invited lectures, but the choice of the organizers was governed by the desire to provide a possibility of giving a comprehensive lecture not only to well-known but also to young scientists. Two poster sessions were very concentrated since about 350 posters were demonstrated. A lively discussion continued till 10 p.m. although the session started at 8.30 a.m.

At the conference was awarded next in turn prize of Springer Verlag for young scientists (less than 40 years old) known for a major contribution into organometallic chemistry aimed at organic synthesis. This time the award was given to G.Fu. He brilliantly delivered the *Springer Award Lecture* describing his best developments: reactions catalyzed by R_4SnH, catalysis with palladium complexes containing as a ligand t-Bu_3P, the use of planar chirality of heterocycles in the asymmetric synthesis.

It was important that in the same region after the OMCOS-11 took place various conferences of interest for the participants. One post-OMCOS conference was in Kioto, and it was dedicated to the 30th anniversary of cross-coupling discovery. It was really a magnificent occasion worth to follow OMCOS.