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Preface

Professor Gyula Pályi

Prof. Gyula Pályi was born on June 6, 1936 in Budapest, Hungary. He graduated at the Technical University of Budapest, Hungary in 1963 and at the University of Pisa, Italy in 1969. His teachers included Prof. Géza Zemplén (a student of Emil Fischer) and Prof. George A. Olah (Nobel, 1994) in Budapest and Prof. Piero Pino (a student of Giulio Natta) in Pisa.

Prof. Pályi worked in the organic chemical industry between 1959 and 1966. Then he spent twenty years at the University of Veszprém (1966–1986) and became a full professor of organic chemistry in 1981. After two years at the Eötvös University in Budapest (1986/1987) he moved to the University of Modena and Reggio Emilia (Italy) in 1987. Prof. Pályi is a member of various Academies, including the European Academy of Sciences Arts and Letters (Paris) and the Italian National Academy of Sciences (the ''Forties'', Rome), and was the recipient of the Zemplén Medal.

The scientific activity of Prof. Gyula Pályi can be divided in three main sectors as (i) instrumental analysis, (ii) organometallic compounds and catalysis and (iii) chirality in chemistry and biology.

Prof. Pályi's main results achieved in the field of *instrumental analysis* include the identification of the structure dependence of the adsorption behavior of organic molecules in the electrode/electrolyte interface leading to the first theory of semi-crystalline organization in the adsorption layer as well as the preparation of highly efficient GC capillary columns by etching of Na-rich glass capillaries with gaseous HCl.

In the area of *preparative and catalytic organometallic chemistry* Prof. Pályi studied transition metals, mainly Ti, Cr, Co, Ni, Cu, Rh and some lanthanides. The most important results included the preparation of carbene and carbyne complexes as well as their interconversion and role in CO activating catalysis, preparative isolation and characterization of important catalytic intermediates (e.g. alkyl- and acylcobalt carbonyls), and studies on the activation of acetylene in carbonylation reactions. He obtained high-impact

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results with the preparation and structural characterization of some of the very first transition metal-pnicogenic element cluster complexes as well as (more recently) by isolation of molecular models of silica supported rhodium carbonyls. He is also active since the 1990s in the field of cyclosiloxanolate-transition metal and -lanthanide complexes obtaining several new complexes of this type, with unusual molecular magnetic and structural (e.g. hexagonal-planar coordinated chloride ion) behavior. A theoretical result in the field of organometallic chemistry is the discovery of the so-called ''autosolvation'' effect, a through-the-space intramolecular interaction between ligands and/or the metal in organometallic complexes, which could have unexpected consequences in the reactivity of these complexes. This effect, originally suspected by Prof. Pályi on the basis of spectroscopic observations became later confirmed by X-ray structural and supported by quantum chemical studies.

Prof. Pályi's activity in the field of *chemical and biological chirality* resulted in interesting structurally characterized models of the intramolecular transfer of (conformational) chirality as well as interactions of configurational and conformational chiralities in the same molecule. He tested these principles in reductions of prochiral organic molecules with Cr(II) complexes of natural amino acids, cooperating with Prof. Micskei's group at the University of Debrecen. These studies culminated in the enantioselective synthesis of natural amino acids from achiral alpha-oximino carboxylic acid precursors by these complexes, where the only source of chirality is the ligand-amino acid of Cr(II).

These results could not be achieved without a rich network of cooperation, first of all with his students (T. Bartik, A. Colombini, A. Cornia, V. Galamb, G.L. Garuti, A. Guttman, I.T. Horváth, A. Sorkau, M. Tasi, D. Turrini, S. Tiddia, G. Váradi, C. Zucchi), with colleagues (H. Alper, Ottawa, G.D. Andreetti, Parma, L. Bencze, Veszprém, R. Boese, Essen, G. Bor, Zurich, L. Caglioti, Rome, A.C. Fabretti, Modena, N. Fujii, Kyoto, M. Kajtár, Budapest, K. Micskei, Debrecen, U.M. Pagnoni, Modena, G.C. Pellacani, Modena, M. Pizzotti, Milan, A. Sisak, Veszprém, G. Schmid, Essen, O.I. Shchegolikhina, Moscow, F. Taddei, Modena, G. Torre, Modena, R. Ugo, Milan, A. Vizi-Orosz, Veszprém). Prof. Pályi feels that he got the most important scientific inspirations from L. Markó, Veszprém, A. Mangini, Bologna, P. Pino, Pisa, J. Proszt, Budapest and G. Zemplén, Budapest.

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