
Preface

Professor Derk J. Stufkens, known to his friends as Dick, has spent all his scientific career at the University of Amsterdam, The Netherlands. In 1971, he obtained there his PhD, to become a full Professor in 1992, Dean of the Faculty of Chemistry (1993–1995) and Scientific Director of the Holland Research School of Molecular Chemistry (1997–2001). The latter comprises also several research groups from the Leiden University and the Free University, Amsterdam. Dick's scientific work has gradually evolved from Raman and resonance Raman spectroscopic studies to comprehensive investigations of photochemistry of organometallic compounds, advancing from mononuclear transition metal carbonyls to di- and polynuclear metal–metal and meta-alkyl complexes and clusters, all containing non-innocent α -diimine ligands. The results of this research were published in 286 original scientific papers. In his photochemical research, Dick has carefully proceeded from spectroscopic studies, that identified the relevant excited states, to a deep understanding of photochemical reactivity by combining photoproduct characterization and quantum yield measurements with matrix-isolation, low-temperature and time-resolved spectroscopic studies. Indeed, Dick has pioneered the use of resonance Raman spectroscopy to reveal the character of electronic transitions of organometallics and his work has contributed much to our understanding of the properties and reactivity of metal-to-ligand charge transfer and ligand-to-ligand charge transfer excited states. Revealing the photochemical importance of sigma-bond-to-ligand charge transfer, also called $\sigma\pi^*$, excited states was Dick's latest remarkable contribution to organometallic photochemistry.

All this work was technically highly demanding. Over the years, the Amsterdam research group became one of the best equipped photochemistry laboratories in Europe. Dick's lab and experimental facilities were

always open to scientists with good ideas but a lack of the necessary equipment. The available expertise, knowledge and insight, great photochemical and spectroscopic instrumentation, as well as the very lively and friendly atmosphere made Dick's laboratory a natural center of many international scientific collaborations which resulted in about 120 publications shared with outside groups. Some of the joint experiments gradually evolved into long-term collaborative programs. Remarkably, Dick's experimental work inspired further theoretical research, that continues in several European quantum chemistry groups.

It was a great pleasure to be the guest editor of this Coordination Chemistry Reviews special issue, marking the distinguished scientific career of Dick Stufkens. After almost 20 years of fruitful collaboration, I can truly appreciate the scientific, technical, organizational and human virtues and achievements of the Amsterdam photochemistry group. This CCR special issue contains contributions from many of Dick's coworkers, long-term scientific collaborators, friends and colleagues. Scientifically, the contributions are loosely centered around spectroscopy, photochemistry, electrochemistry and reaction mechanisms of transition metal complexes, especially those containing non-innocent ligands. They attempt to highlight the experimental as well as theoretical aspects of the chemistry of photo- and redox-active coordination and organometallic compounds and to outline some possible applications.

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