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PREFACE

The field of organometallic chemistry deals largely with man-made molecules and materials. It reflects our fortuitous discoveries and our creative extensions from that which was already known. By definition, it is the subdiscipline of chemistry that deals with metal–carbon bonds and by now is a maturing field having already established its utility in organic synthesis and materials chemistry. Of critical importance to the reactivity of a metal–carbon bond is its environment and in this regard the ancillary ligands at a metal centre play a crucial role. For the transition metal elements most of the organometallic chemistry has been based on the use of soft, π-acceptor ligands such as carbon monoxide, tertiary phosphines and η^n-carbocyclic ligands. The use of the now ubiquitous family of cyclopentadienyl ligands has led to the rapid development of the organometallic chemistry of the lanthanides, actinides and early transition metals. One might even ask: where would we be without the bent Cp'_2M fragment?

Alkoxides and related O-donor ligands (aryloxides, trialkyl- or triarylsiloxides, etc.) are a class of ligands that are rapidly emerging in importance in organometallic chemistry.[1] They are complementary to soft, π-acceptor ligands and share many common attributes concerning the tuning of the electronic and steric properties of a metal centre. Particularly for early transition metals, lanthanides, actinides and main group elements they offer a wide range of possibilities and have already made a significant impact as chiral auxiliaries in the chemistry of magnesium and zinc alkyls.[2] In this symposium-in-print a number of key contributors to this rapidly developing field summarize their findings and offer their views on current trends.

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