

Foreword



It is a great honor to write the Foreword to this Special Issue of the Journal of Organometallic Chemistry that is dedicated to Professor F.A. Cotton in Memoriam. I saw Al the last time at the Atlanta ACS meeting in April 2006 to celebrate his ACS Pimentel Award, and Al was his usual energetic, intense and perceptive self. There seemed little doubt that he would be with us for a long, long time. Thus, the chemistry community was shocked when Al passed away on February 20, 2007. Since then several very touching obituaries have appeared, and those of Steve Lippard [1] and Carlos Murillo [2] are especially informative.

While the major focus of Al's lifelong research was the chemistry of coordination and metal-metal bonded compounds, he made many important contributions to organometallic chemistry. Among countless accolades Al received

[2], the 2001 ACS Award in Organometallic Chemistry is of special note. In fact, the beginning of Al's career coincided with the second coming of inorganic chemistry – the discovery of ferrocene that marked the start of modern organometallic chemistry. Being a graduate student of Geoff Wilkinson in the early 1950s, Al played a key role in the early studies of metallocenes – most notably the determination of the heat of formation of ferrocene and other metallocenes [3]. While still a graduate student, Al penned one of the first comprehensive reviews on metal alkyl/aryl compounds [4], a feat that would have seriously challenged most of the established professors. In the 1960s and early 1970s, Al and his students carried out trail blazing studies of metal carbonyl compounds, both mononuclear and clusters. In particular, Al established the mechanism of dynamical intramolecular rearrangements of carbonyl species by

using ^1H and ^{13}C NMR and coined the term “fluxionality”. It was also during this time that Al published the method of using symmetry to simplify the force-field analysis of vibrational spectra of metal carbonyl compounds – a paper that has been cited about 1200 times and is easily his most cited original contribution [5]. Al’s group was also among the first to observe the $\text{C-H}\cdots\text{M}$ interaction long before the introduction of the term “agostic interaction” [6]. As one of the consequences of their lifelong, sometimes competitive, friendship, Al and Geoff Wilkinson joined forces in the mid 1970s to prepare and characterize several homoleptic multiply bonded dimetal alkyl compounds, namely $[\text{Mo}_2(\text{CH}_3)_8]^{4-}$ and $[\text{Re}_2(\text{CH}_3)_8]^{2-}$ [7]. Al’s unwavering endeavors in organometallic chemistry continued until very recent times, and included a beautiful example of using ferrocenylethyne as the probe of charge mobility in the metal–atom–chain compounds [8].

Al’s passion for organometallic chemistry was also reflected in the huge body of pedagogical works he was associated with, most notably in the renowned textbook *Advanced Inorganic Chemistry* that is affectionately known as the *Cotton and Wilkinson*. The first edition, published in 1962, has one chapter (28) dedicated to organometallic compounds, while the most recent edition (6th) has about 10% of its coverage dedicated to organometallic chemistry.

Among many memorable moments with Al, I vividly recall an exchange during my second year in Al’s group. After taking a bite of my lunch, Al complimented me on my cooking and mentioned that Dee never let him set foot in the kitchen. Emboldened by this compliment, I said to him that “being a good chef is the best indicator of one’s synthetic skills, and that he, with little culinary talent, is only a theoretical inorganic chemist”. Forgiving a bone-headed second year graduate student, Al simply smiled

and walked away. After 15 years of an independent career, I have come to realize that while most of us become craftsmen in one or two special trades, Al always had his sight set on the grand scheme of things and never got bogged down by trivia. Like Michelangelo, Al outlined the Sistine Chapel and St. Peter’s Basilica of modern inorganic chemistry with his broad brushes. We, the apprentices and associates, just filled out the details of his visions.

Al had been affiliated with the *Journal of Organometallic Chemistry* over an extended period of time, most recently as an *Emeritus Honorary Board Member*. It is fitting that we pay a final tribute to Al in this JOMC special issue, where Al’s footprints are omnipresent.

References

- [1] S.J. Lippard, *Nature* 446 (2007) 626.
- [2] C.A. Murillo, *Inorg. Chim. Acta* 360 (2007) 2519.
- [3] F.A. Cotton, *J. Organomet. Chem.* 637 (2001) 18.
- [4] F.A. Cotton, *Chem. Rev.* 55 (1955) 551.
- [5] F.A. Cotton, C.S. Kraihanzel, *J. Am. Chem. Soc.* 84 (1962) 4432.
- [6] F.A. Cotton, M. Jeremic, A. Shaver, *Inorg. Chim. Acta* 6 (1972) 543.
- [7] (a) F.A. Cotton, J.M. Troup, T.R. Webb, D.H. Williamson, G. Wilkinson, *J. Am. Chem. Soc.* 96 (1974) 3824;
(b) F.A. Cotton, L.D. Gage, K. Mertis, L.W. Shive, G. Wilkinson, *J. Am. Chem. Soc.* 98 (1976) 6922.
- [8] J.F. Berry, F.A. Cotton, C.A. Murillo, *Organometallics* 23 (2004) 2503.

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