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Adventures in Divalent Early Transition Metal Coordination Chemistry: On the Way to Metal–Metal Bonded Species

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**Adventures in Divalent Early Transition Metal Coordination Chemistry: On the Way to
Metal–Metal Bonded Species**

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Abstract

During the search for appropriate early-transition-element starting materials to generate dinuclear paddlewheel species having metal–metal bonded cores of the type M_2^{4+} , it was necessary to gain more insight into the relatively unexplored coordination chemistries of divalent vanadium, niobium and titanium. Here it is shown how an increased understanding of the chemical behavior eventually led to such species for vanadium and niobium while those of titanium remain elusive. The narrative chronicles some of the strategies behind the preparations and also how careful data analyses provided the blueprint for fully-designed syntheses. Even though the emphasis is on the syntheses, the figures show the structures of the compounds synthesized and structurally characterized in our laboratory in conjunction with Al Cotton.

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† In honor of my good friend and spirited scientist Luis Echegoyen, an inspiring example of what can be accomplished by focusing on achieving a goal and excelling in advancing science.

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