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# *Editor's Page*

The "bottom-up" approach to molecular electronics has been attracting a great deal of attention by all sorts of chemists. Organometallic chemistry is likely to play a feature role in the development of this field. In this review, Professor Tong Ren describes the synthesis and chemistry of a wide range of ruthenium−alkynyl organometallics that hold significant promise in the area of molecular electronics. Hybrid $\pi$-conjugated carbon-rich organic and inorganic materials have a host of potential electronics applications. The key metallic unit utilized by Professor Ren in his work is the diruthenium paddlewheel motif $Ru_2(LL)_4$, which is connected via axial positions to conjugated $-(C{\equiv}C)_n-$ units to afford dimeric and oligomeric $\sigma$-alkynyl complexes. Electronic coupling of metal $\sigma$-alkynyl building blocks connected by carbon-rich organics results in intensely chromophoric assemblies that have multiple reversible redox couples over a broad potential range. The HOMO−LUMO energy gap, and hence the conductivity, of these materials can be rationally controlled by chemical alterations. In turn, these properties suggest that molecular engineering of the $Ru_2$−alkynyl organometallics may lead to molecular wires, and perhaps even molecular diodes. Professor Ren further suggests that 2D and 3D supramolecular assemblies of the $\sigma$-alkynyl complexes may find application in photovoltaics and biochemical sensing. The chemistry presented in this review is a lovely amalgamation of diverse fields—synthesis, electrochemistry, materials, nanoscience, physics—with organometallic chemistry being the unifying feature binding it all together.

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