

## THE FASCINATING GOLD(I) PHOTOLUMINESCENCE

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Exciplex emission is usually encountered in organic photochemistry but examples of inorganic and organometallic complexes that display exciplex emission are extremely rare. In this context, the coordinative unsaturated d<sup>10</sup> gold(I) complexes are good candidates for the study of metal-metal bonded exciplex emissions. Recent studies have witnessed the rich gold(I) photoluminescence which has important applications in the development of luminescent sensory materials. In literature, the visible emissions of most dinuclear and/or polynuclear gold(I) phosphine complexes have been assigned to come from excited states that involve gold-gold bonding. In this contribution, we report findings based on emission and resonance Raman studies, molecular orbital calculations and time-resolved absorption spectroscopy that confirm the visible emissions of most gold(I) phosphine complexes actually come from exciplex formation of gold(I) with neighbouring solvent molecule or counteranion.