New 3-Imidazoline-1-oxyl Radicals with Pyridyl and Quinolyl Containing 4-(2-Aminovinyl) Substituents and Palladium, Platinum and Ruthenium Complexes of these 4-Amino-1-aza-diene Ligands

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The addition of pyridyl and quinolyl nitriles to the 4-lithium salt of 1-hydroxy-2,2,4,5,5-pentamethyl-3-imidazoline with a silyl protected OH group affords 4-aminovinyl substituted imidazoline derivatives 3, 6, 9, 12, and 15 which can be converted into the corresponding nitroxide radicals 5, 8, 11, 14 and 17. The 4-amino-1-aza-diene residues of these imidazoline nitroxides form a series of chelates of palladium (22–26, 29–32) and with ruthenium half sandwich complexes (33–36). Coordination of the pyridine or quinoline N atom has been observed in mononuclear (19–21) and trinuclear (27, 28) palladium complexes and the structure of 19 was determined by X-ray diffraction.

Key words: Nitroxide Radicals, Imidazoline, Transition Metal Complexes