Synthesis and Properties of 2-(Dimesitylboryl)benzylideneamines

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Dedicated to Professor Hubert Schmidbaur on the occasion of his 75th birthday

Lithiation of 2-(2-bromophenyl)-dioxolane (**1**) followed by reaction with dimesitylboron fluoride afforded 2-(2-dimesitylborylphenyl)-dioxolane (**2**) which was deprotected to afford 2-dimesitylboryl-benzaldehyde (**3**). Compound **3** reacts with aliphatic amines such as *n*-butylamine and ethanolamine to afford the corresponding imines 2-(dimesitylboryl)benzylidenebutylamine (**4**) and 2-(dimesitylboryl)benzylideneethanolamine (**5**), respectively. Structural studies indicate coordination of the imine-nitrogen atom to the boron center. Imines **4** and **5** emit a green fluorescence near 510 nm with quantum yields approaching 10 %. TD-DFT calculations suggest that this emission arises from an intramolecular charge-transfer excited state.

Key words: Boron, Fluorescence, Imine, Aldehyde