Some New Luminescent Compounds Based on 4-Methylbenzylamine and Lead Halides

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Compounds of the general formula $(CH_3NH_3)_{n-1}(CH_3C_6H_4CH_2NH_3)_2Pb_nX_{3n+1}$, where X = I, Br, Cl and n = 1, 2, 3,..., were prepared and characterized analytically and spectroscopically. Moreover, $(CH_3C_6H_4CH_2NH_3)_2PbX_4$ and $(CH_3NH_3)(CH_3C_6H_4CH_2NH_3)_2Pb_2I_7$ were characterized by X-ray crystal structure analysis. Their optical absorption and photoluminescence spectra exhibit excitonic bands, even at room temperature.