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Effect of Alkyl Chain Length on the Thermophysical Properties of Pyridinium Carboxylates

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Abstract

In the present study, new series of pyridinium carboxylate protic ionic liquids (PIL's) were synthesized by pairing pyridinium cation with carboxylate anion from C_1−C_3 forming pyridinium formate ($[C_5H_6N^+][HCOO^-]$), pyridinium acetate ($[C_5H_6N^+][CH_3COO^-]$) and pyridinium propionate ($[C_5H_6N^+][CH_3CH_2COO^-]$) respectively. The physical properties namely, density, viscosity, surface tension (298.15–343.15) K, refractive index (293.15–323.15) K were measured. Thermal properties namely, glass transition temperature, molar