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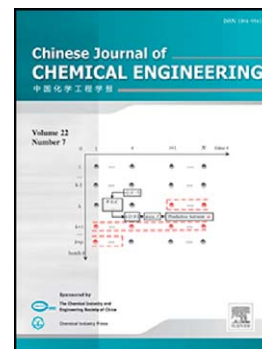
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## Chemical Engineering Thermodynamics

**Effect of Alkyl Chain Length on the Thermophysical Properties  
of Pyridinium Carboxylates**Tazien Rashid<sup>a</sup>, Chong Fai Kait<sup>b</sup>, Thanabalan Murugesan<sup>\*a</sup>

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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<sub>1</sub>–C<sub>3</sub> forming pyridinium formate ([C<sub>5</sub>H<sub>6</sub>N<sup>+</sup>][HCOO<sup>-</sup>]), pyridinium acetate ([C<sub>5</sub>H<sub>6</sub>N<sup>+</sup>][CH<sub>3</sub>COO<sup>-</sup>]) and pyridinium propionate ([C<sub>5</sub>H<sub>6</sub>N<sup>+</sup>][CH<sub>3</sub>CH<sub>2</sub>COO<sup>-</sup>]) 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

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