Ionic liquids (ILs), salts with melting points below 100 °C, have attracted considerable attention as novel reaction media over the last decade. Their negligible vapour pressure, conventional non-flammability, and outstanding solvation potential are the basis for them often being classified as “green” solvents [1, 2]. Their potential is further emphasised by the fact that their physical and chemical properties may be finely adjusted by varying both the cation and the anion. Ionic liquids are providing unexpected opportunities at the surface and interface of chemistry. Amphiphilicity of ionic liquids can have a significant impact on the type and areas of application of these compounds. The use of them in industrial technologies requires, inter alia, the knowledge of their surface activity.

In this paper, we present data on surface tension of synthesized a novel group of piperidinium ionic liquids, which were measured using the pendant drop method under ambient conditions. In the first step N-alkyl-N-methylpiperidinium bromides were prepared from the quaternization reaction of N-methylpiperidine with proper bromoalkanes by stirring in acetonitrile for 24 h at room temperature with the former always in excess. N-dodecyl-N-methylpiperidinium bromide was further used to obtain corresponding piperidinium ionic liquids via anion-exchange reaction conducted in water or organic solvent. The products were purified and characterized by $^1$H and $^{13}$C NMR spectroscopy.

These synthesized ILs were divided in two groups. The first consists of ILs with the cation N-alkyl-N-methylpiperidinium and the chosen anion. By systematic variation of the cation the dependence of the alkyl chain length on the surface tension was investigated. The second group consists of ILs with the cation N-dodecyl-N-methylpiperidinium to discuss the effect of the anion on the surface tension. The chosen anions range from small anions to large: $[\text{Br}^-]$, $[\text{NO}_3^-]$, $[\text{NO}_2^-]$, $[\text{HCOO}^-]$, $[\text{CH}_3\text{COO}]^-$, $[\text{HSO}_4^-]$, $[\text{MAc}]^-$, $[\text{MEAc}]^-$, $[\text{MEEAc}]^-$, $[\text{DBS}]^-$, $[\text{C}_{10}\text{H}_{21}\text{COO}]^-$.
