

Physical properties of ionic liquids based on N-methyl-N-alkyl morpholinium cations

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A series of ionic liquids based on morpholinium cations was prepared. N-alkyl-N-methylmorpholinium bromide, N-alkyl-N-methylmorpholinium tetrafluoroborate, N-alkyl-N-methylmorpholinium hexafluorophosphate and N-alkyl-N-methylmorpholinium bis(trifluoromethanesulfonyl)imide were synthesized, and then thermal and electrochemical properties of prepared ionic liquids were measured. These morpholinium salts were found to be thermally stable near 400 °C and electrochemically stable up to 6 V at room temperature. In conclusion, these new series of morpholinium based ILs might be potential candidates for electrolytes in batteries and other electrolytic devices.