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FLASH PREPARATION OF IONIC LIQUIDS UNDER MICROWAVES AND/OR ULTRASOUND

Emanuela Calcio Gaudino¹, Giancarlo Cravotto^{1*}, Luisa Boffa¹, Jean-Marc
Lévêque²

¹ Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Via Giuria 9, 10125
Torino, Italy

² Laboratoire de Chimie Moléculaire et Environnement, Polytech'Savoie, Université de
Savoie, 73376 Le Bourget du Lac Cedex, France.

giancarlo.cravotto@unito.it

Non-conventional techniques, such as microwave (MW) and power ultrasound (US) as well as combined MW/US irradiation, have been used to promote one-pot synthesis of second-generation ionic liquids (ILs), cutting down reaction times and improving yields. However, the use of chloroalkanes in the alkylation of *N*-heterocycles requires more drastic conditions if results are to match those obtained with more reactive alkyl halides. The present contribution describes a series of MW- or MW/US-promoted ILs preparations starting from chloroalkanes and classic heterocycles (1-methylimidazole, pyridine and 1-methylpyrrolidine). When reactions were carried out under conventional heating in an oil bath they required longer reaction times and gave poorer yields. ¹H-NMR analysis and ion-exchange chromatography showed that the present solventless procedure afforded ILs of satisfactory purity. The observed high yields (usually 70-98% isolated), and short reaction times showed that a straightforward access to ILs can be also achieved with the use of alkyl chlorides, resulting in a considerable reduction of costs.