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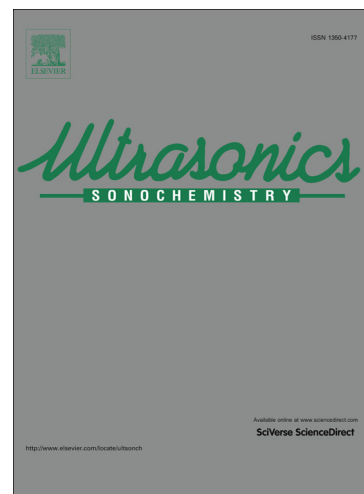
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An efficient comparison of methods involving conventional, grinding and ultrasound conditions for the synthesis of fulleroisoxazolines

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Abstract

In this research, an efficient comparison between conventional, grinding and sonication methods for the synthesis of fulleroisoxazolines was investigated. Compared to the conventional methods, ultrasound procedure showed several advantages including mild reaction conditions, high yields, short reaction times and environmental friendliness.

Keywords: Fullerene; Cycloaddition reaction; Fulleroisoxazoline; Ultrasound irradiation; Grinding method.

1. Introduction

Since their discovery, fullerenes in general and buckminsterfullerene C₆₀ in particular, became a subject of great interest for scientific researches [1, 2]. Extensive studies on the chemical functionalization of fullerenes have become one of the main challenges in organic chemistry. Surface functionalization of fullerenes is an attractive approach in the physics, chemistry, material science, biological and biomedicine fields [3-10]. Fullerenes behave as 2π electron-deficient dienophiles and 1,3-dipolarophiles undergoing a variety of cycloaddition reactions [11-15]. Four main types of cycloaddition involving [1+2], [2+2], [3+2] and [4+2]

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