



"Gheorghe Asachi" Technical University of Iasi, Romania



RP-HPLC ANALYSIS OF CARBONYL COMPOUNDS IN SOME INDOOR AIR SAMPLES IN A FACULTY FROM CLUJ-NAPOCA

Carmen Roba^{1*}, Cristina Roșu¹, Iulia Neamțiu^{1,2}, Eugen Gurzău^{1,2}

¹*Babeș-Bolyai University, Faculty of Environmental Sciences and Engineering, 30 Fântânele Street, 400294 Cluj-Napoca, Romania*

²*Environmental Health Centre, 58 Busuiocului Street, 400240 Cluj-Napoca, Romania*

Abstract

This study describes a reversed-phase high-performance liquid chromatography (RP-HPLC) method for the analysis of several carbonyl compounds in air samples. The air samples were collected using a passive sampling method and cartridges based on florisil impregnated with 2,4-dinitrophenylhydrazine (2,4-DNPH). After derivatization the carbonyl compounds were analyzed by liquid chromatography technique coupled with UV detection. The developed RP-HPLC method was used to analyze eight carbonyl compounds in air samples collected from the indoor environment of a faculty building located in Cluj-Napoca. The analyses results indicated the presence of three carbonyl compounds: propionaldehyde (2.65-3.14 $\mu\text{g}/\text{m}^3$), acetaldehyde (10.45-26.91 $\mu\text{g}/\text{m}^3$), and acetone (44.96-89.88 $\mu\text{g}/\text{m}^3$).

Key words: carbonyl compounds, indoor air pollution, passive sampling

Received: October 2012; Revised final: February, 2013; Accepted: February, 2013

* Author to whom all correspondence should be addressed: E-mail: carmen.roba@ubbeluj.ro; Phone: 40-264 30 70 30; Fax: 40-264 30 70 32