



**"Gheorghe Asachi" Technical University of Iasi, Romania**



---

## **SOUND-ABSORBING PROPERTIES OF COMPOSITE MATERIALS REINFORCED WITH VARIOUS WASTES**

**Mihai Bratu<sup>1\*</sup>, Ioan Ropota<sup>2</sup>, Ovidiu Vasile<sup>3</sup>, Ovidiu Dumitrescu<sup>4</sup>, Marcela Muntean<sup>4</sup>**

<sup>1</sup>National Research & Development Institute for Industrial Ecology - ECOIND, 90-92 Panduri Str., Bucharest, Romania

<sup>2</sup>Plastic Art College "Dumitru Paciurea", 29 Baiculești Str., Bucharest, Romania

<sup>3</sup>University "POLITEHNICA" Bucharest, Department of Mechanical Engineering, 313 Independentei Spl., Bucharest, Romania

<sup>4</sup>University "POLITEHNICA" Bucharest, Faculty of Applied Chemistry and Materials Science, Department of Oxide Materials Science & Engineering and Nanomaterials, 1-7 Polizu Str., Bucharest, Romania

---

### **Abstract**

Noise is a complex sound without periodic character which affects biological and psychological state of humans and other organisms in nature. This paper presents research on the sound-absorbing properties of new types of ecological composite materials reinforced with various wastes that can harm the environment. Sound absorbing capacity for new composites depends on the proportion and nature of the waste used. The absorption coefficient was determined for each sample in order to characterize the sound-absorbing capacity for each composite material obtained and the reinforcement material influences on the sound absorbing properties.

*Key words:* absorption coefficient, absorbing properties, composite materials, sound-absorbing capacity

*Received: April, 2011; Revised final: August, 2011; Accepted: August, 2011*

---

\* Author to whom all correspondence should be addressed: Email: cmm\_bratu@yahoo.com , Phone: +40 723685857