

ABSTRACT

Sound is a non-electromagnetic wave produced by vibrations of material with a certain frequency and intensity that propagates longitudinally. This research was conducted by making activated carbon functionalized with silica sand and combined using PVA matrix. Activated Carbon/Silica Sand Composite Silica/PVA composites were made with variations between activated carbon and silica sand, namely 1:1; 1:2; and 2:1. Then the Activated Carbon/Silica Sand/PVA composites were characterized with FT-IR, SEM-EDX, and BET and tested the sound ability with the impedance tube method. The results obtained in the form of a composite of Activated Carbon / Silica Sand / PVA which is a cylindrical solid with a morphology of 1. is a cylindrical solid with morphology in the form of microparticle-sized particles and silica. microparticles and there is silica attached to carbon in the form of crystalline crystals. Pores are formed between particles and intraparticles. While the best ability is found in the Activated Carbon / Silica Sand / PVA composite with a variation of 1:2 with the value of sound intensity absorbed. variation of 1:2 with the value of absorbed sound intensity and sound absorption coefficient of 4.7982 dB, respectively. sound intensity and sound absorption coefficient of 4.7982 dB and 4.56%, respectively.

Keywords: sound, activated carbon, silica sand, PVA