International Journal of Engineering Science and Technology, Vol. 2, pp. 39-49, 2002.

ANALYSIS OF INTERNALLY GENERATED NOISE OF BIOELECTRIC AMPLIFIERS

Mashhour Bani Amer,

Department of Biomedical Engineering,

Jordan University of Science and Technology

P. Box. 3030, 22110 Irbid, JORDAN

This paper deals with internally generated noise of bioelectric amplifiers that are usually used for processing of bioelectric events. The main purpose of this paper is to present a procedure for analysis of the effects of internal noise generated by the active circuits and to evaluate the output noise of the author's new designed bioelectric amplifier that caused by internal effects to the amplifier circuit itself in order to compare it with the noise generated by conventional amplifiers. The obtained analysis results of internally generated noise showed that the total output noise of bioelectric active circuits does not increase when some of their resistors have a larger value. This behavior is caused by the different transfer functions for the signal and the respective noise sources associated with these resistors. Moreover, the new designed bioelectric amplifier has an output noise less than that for conventional amplifiers. The obtained analysis results were also experimentally verified and the final conclusions were drawn.