

# STUDY OF THE ELECTROCHEMICAL REACTION OF D-GLUCOSE CONVERSION IN THE PRESENCE OF AN ENZYME ELECTRODE

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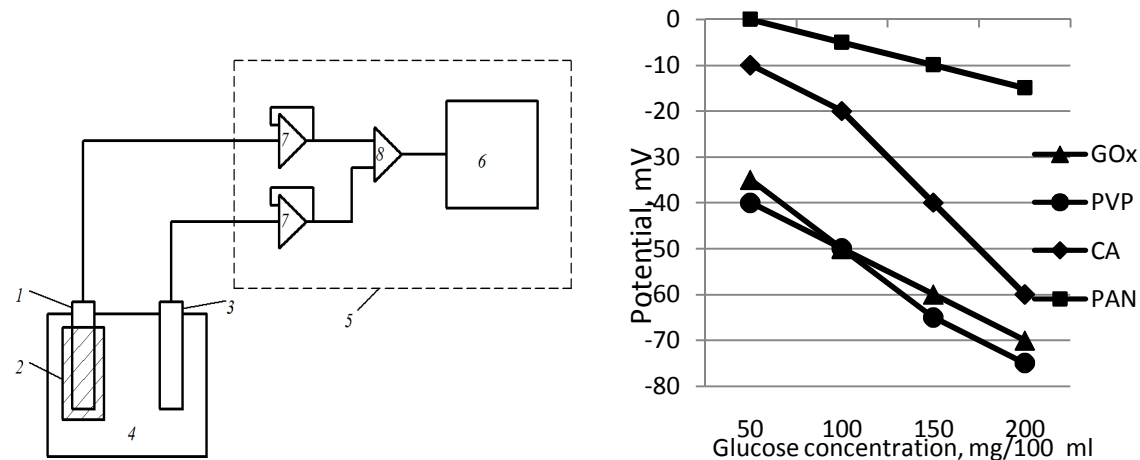
**Table. Dependence of the activity of the bi-enzyme polymer matrix on the amount of the immobilized enzyme complex**

№ sample	Matrix type	Ratio of modifiable agents: Chit :Glu	Adsorber. complex of enzymes, %	Activity of the bi-enzyme polymer matrix, %
1	PVP 2 mg	1:2	68.4	92.7
2		1:3	50.2	90.5
3		1:4	87.5	50.3
4		1:5	80.3	37.7
5	CA 2 mg	1:2	40.7	84.9
6		1:3	60.9	68.7
7		1:4	78.7	45.4
8		1:5	70.4	28.6
9	PAN 2 mg	1:2	70.6	70.7
10		1:3	57.8	62.3
11		1:4	48.2	30.4
12		1:5	39.1	28.5

PVP- polyvinylpyrrolidone, CA- acetylcellulose, PAN - polyaniline, Chit:Glu - modifying agents chitosan and glutaric dialdehyde, complex of enzymes peroxidase (HRP) and glucooxidase (GOx). As a result of immobilization on the modified PVP matrix, the activity decreased by 1.6 times, and the maximum degree of immobilization was 87%; as a result of immobilization on the modified ADC matrix, the activity decreased by 1.8 times, with the maximum degree of immobilization being 78%; as a result of immobilization on the modified PAN matrix, the activity decreased by 2.1 times, with the maximum degree of immobilization being 70%.

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As seen in Fig. (a), the dependence is nerstovsky at concentrations 1 (b) is about — 40 mV/pC glucose. The method of adsorption immobilization used in this work of glucose of 50 – 200 mg/100 ml. the slope of the curves in Fig. has proved to be the simplest and provides a strong adsorption of the enzyme on the electrode surface while maintaining high activity.



**Fig.:** a) General electrical circuit for measuring the biosensor potential at an indicator electrode other than the ISE. 1-indicator electrode; 2-enzyme-polymer complex on the indicator electrode; 3-comparison electrode; 4-electrolyte containing the substance to be determined; 5-high impedance potentiometer; 6-display; 7-operational amplifier current repeater; 8-comparator; b) potentiometric response glucose oxidase ionselective glass electrode in an oxygen-saturated solution of D-glucose at pH=7.4 (0.1 M sodium phosphate buffer solution).