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Electronic Circuits for Graphene-based Biosensor

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In the paper the results of research on electronic measurement and control systems designed for a multifunctional graphene-based biosensor are presented. Design of different types of biosensing electrodes based on graphene technology is discussed. Development of electronic circuits for read-out of the biosensor signals based on two microcontroller platforms (ATXmega128A1U and STM32F407) is described, including hardware and software design solutions. Comparison of measurement results using both prototype systems in electrochemical biosensing techniques (EIS - Electrochemical Impedance Spectroscopy) is also presented.