



RECI 2020

Book of Abstracts on

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It is supposed to use the following research methods: theoretical analysis of scientific and technical literature on the research topic, as well as national and international standards in the field of programming mobile applications; programming in the Android Studio environment; processing, analysis, generalization and approbation of research results.

The research process uses an integrated software development environment and Android Studio 4.0. Practical work is aimed at mastering by students the skills of using programming technologies, which are significant for increasing the efficiency of mastering the basics of programming mobile applications and their further free use.

Expected results: Theoretical and methodological materials for studying the basics of programming mobile devices, as well as a set of practical works on programming technology in the Android Studio environment.

Modeling and Control of Plant Growth Productivity Based on Experimental Data Under Conditions of Hydroponic Systems

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The accelerated development of information technology, computer technology and advances in mathematical disciplines provide new opportunities for physiologists to develop a method for controlling the productive processes of plants.

Currently, the development of a productivity management method for crop production in greenhouses, artificial climate installations and in hydroponics is relevant. The main objective of greenhouse crop production improvement is to produce plants regardless of the season. The most promising in terms of rationally used territory, reducing labor costs is the method of growing in low-volume hydroponics. Low-volume technology for growing plants in greenhouses provides for the creation of optimal water-air, nutrient, temperature parameters in the root zone of plants. The productivity management method should be based on mathematical models of production processes, which include photosynthetic activity of plants, growth and accumulation of biomass. Analytical techniques for describing growth processes cannot be applied independently, therefore, it is mandatory to supplement with graphical and tabular information.

In this regard, the goal is to model and evaluate the quality according to a pre-selected criterion and substantiate the methods and algorithms for determining the parameters of dynamic growth models from experimental data. The achievement of this goal will be carried out by theoretical and experimental research. The theoretical study is devoted to obtaining dependencies that make it possible to establish the optimal design and technological parameters of devices included in the supply and distribution system of nutrient solutions in low-volume hydroponic greenhouses. Experimental studies are planned to be carried out on specially made model installations using standard and private techniques using the method of planning an experiment.