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A SMART DEVICE FOR MAINTAIN GREENHOUSE CONTROLLING ENVIRONMENTS PARAMETERS.

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**TITLE OF THE INVENTION –
“A SMART DEVICE FOR
MAINTAIN GREENHOUSE CONTROLLING ENVIRONMENTS
PARAMETERS.”**

ABSTRACT

The smart device for maintain greenhouse controlling environments comprising greenhouse robotic system and more particularly relates to greenhouse automation system with includes IoT configuration and connected to the server using the satellite frequency as a WiFi Module and others supporting components and said device, automation is performed by said robot and its connected IoT system by controlling parameters by users as a given an input data. The integration of these devices can be done by sensors and the information is transferred using the wireless communication protocols of server. This system mainly includes the physical devices and deep learning methods of Artificial Intelligence that incorporates these functionalities and rough wireless medium and processed at the developed system. Further from the results obtained from the data the irrigation system is switched on and off. The values received are categorized into different levels through the classifiers and water pump is switched on for irrigation.

**TITLE OF THE INVENTION –
“A SMART DEVICE FOR
MAINTAIN GREENHOUSE CONTROLLING ENVIRONMENTS
PARAMETERS.”**

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FIELD OF THE INVENTION

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The present invention relates to greenhouse robotic system. The present invention more particularly relates to greenhouse automation system with includes IoT configuration and connected to the server using the satellite frequency as a WiFi Module and others supporting components and said device, more particularly automation is performed by said robot and its connected IoT system by controlling parameters by users as a given an input data.

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BACKGROUND OF THE INVENTION

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The present application relates generally to plant nursery operations and, more particularly, to methods and systems utilizing autonomous mobile robots for maintenance or other processing of container-grown plants. Automation in the nursery and greenhouse sector of the agriculture market is generally confined to large greenhouses. Such greenhouses typically utilize fixed rails and conveyors to move plant-holding containers about the greenhouse, where various processes are performed on the plants as they mature. The controlled, indoor environment of the greenhouse is conducive to implementation of automatic machinery that can bring needed resources to each plant, and also transport plants to particular machines such as vision systems used for grading and sorting plants. Growers whose products are grown mostly on large outdoor fields (typical of many operators in the United States) make do with manual labor. Automated machinery and vision systems developed for indoor use are not generally used by outdoor growers as these systems are not well-suited to work in uncontrolled and unstructured environments.

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US 8676425 B2 disclose the system is provided for processing container-grown plants positioned in a given area. The system includes a processing station positioned in the area

for processing the container-grown plants. It also includes one or more autonomous mobile container handling robots configured to: (i) travel to a source location in the area and pick up a container-grown plant, (ii) transport the container-grown plant to the processing station where a process is performed on the container-grown plant, (iii) 5 transport the container-grown plant from the processing station to a destination location in the area, (iv) deposit the container-grown plant at the destination location, and (v) repeat (i) through (iv) for a set of container-grown plants in the source location.

KR 20060042829 A disclose the invention provides a multi-purpose hybrid robot system for growing greenhouse cultivation, comprising: a hybrid robot having a structure in which a serial manipulator and a parallel manipulator are mixed, the structure of which can be changed according to work; A robot control device for controlling the hybrid robot; Hybrid robots; The hybrid manipulator is composed of a multi-operable hybrid manipulator and a leading end device for performing a task. The hybrid manipulator 15 includes a parallel manipulator including a plurality of parallel links, and is mounted on a platform of the parallel manipulator. It consists of a series end joint that allows rotation about the u axis or w axis among the w, and a series base joint that rotates the parallel manipulator about the z axis among the spatial coordinate axes x, y, and z. Easy to change in structure, the robot control device; When the target position and direction of the tip 20 device are input, the multiple link length of the parallel manipulator, the rotation angle of the serial final joint, and the rotation angle of the serial base joint are calculated and the link length and joint rotation angle calculated by the inverse kinematics and the forward kinematics are calculated. It controls the parallel manipulator, the serial end joint and the serial base joint, and uses the forward kinematic sensor of the parallel manipulator to 25 track the position of the tip device.

SUMMARY OF THE INVENTION

30 The main aspect of the present invention comprising An Internet of Things (IoT) intelligent system that handles the frost and makes appropriate measures that controls the irrigation at greenhouse by the use of various Artificial Intelligence and robotic methods.

Another aspect of the present invention comprising the intelligent system does the functionalities of frost measurement and control the flow of irrigation inside the greenhouse. Along with above said features, it also includes the process of monitoring the level of frost which helps in producing the water for irrigation.

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Other aspect of the present invention comprising the execution of programming for Internet of Things inside the included framework fills in as follows; the information created by using the climate station is related and sent by using a far flung sequential conference. The second piece of the shrewd determining application incorporates actualizing the yield insurance focused in nurseries. The smart ice water gadget the executives of the climate wonder that changes in a natural fiasco makes use of the numerical fashions proposed to assume as far as viable for the ice nearness.

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One of the aspect of the present invention comprising the IoT and Artificial Intelligence system methods helps in robot driver system attaining this functionality followed by functions of each components listed as the follows:

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a) Multiple functionalities incorporated inside the full of intelligent system that carries out the process of integration of devices and transmission of communication through the wireless Protocol

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b) The entire process is driven by using the solar powered battery that control and act as the driving force of system

c) Data collected and gathered on two basis: manual and automatic calculation of process which is stored in database, analyzed and drives the system towards the control measure

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d) Control functions can be either manual or automatic at the remote side. These functionalities are accessed through GPS and data are received and manipulated there at the other end.

e) Classification of input and output variables are accessed thereby the value determines the properties of irrigation. Based on the deep learning and neural network features the process are classified into different categories based on the frost level.

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Another aspect of the present invention comprising an embodiment of the disclosure

relates to supplying an agricultural robotic this is configured to navigate an agricultural developing site, including a greenhouse, open area, or orchard, to find and inspect flowers developing on the website online. In an embodiment of the disclosure the agricultural robotic, hereinafter also referred to as an AGRIBot, comprises an acoustic sensor module mounted to an self sufficient cellular platform, with the aid of way of example an self sustaining floor automobile or an self reliant aircraft. The acoustic sensor module contains a speaker controllable to transmit an acoustic signal and a microphone operable to acquire and sign up an acoustic sign.

Other aspect of the present invention comprising an embodiment of the disclosure, the speaker and microphone are managed by way of a sound analyzer, which may be operable to manipulate the speaker and microphone, as well as analyze sound registered by using the microphone, in one or both of an echolocation mode and a communique mode.

One of the aspect of the present invention comprising in the echolocation mode, the sound analyzer is operable to govern the speaker to transmit an acoustic sign comprising a wide spectrum beam of acoustic electricity, optionally characterised with the aid of ultrasonic frequencies, to light up the growing website online with acoustic electricity, and examine reflected acoustic indicators which are registered by way of the microphone. The sound analyzer can be operable to manner the pondered acoustic sign to map a planting sample of the vegetation within the growing site and locate plants for inspection, in addition to optionally locate different objects within the growing web page. In an embodiment of the disclosure, the cellular platform is attentive to the sound analyzer to navigate the planting pattern and role the AGRIBot for positive inspection of the flora.

Another aspect of the present invention in the conversation mode, the sound analyzer is operable to govern the speaker to transmit acoustic conversation indicators to a conversation partner, and process acoustic conversation signals acquired from a verbal exchange partner by means of the microphone. Optionally, the acoustic conversation indicators include operational commands for an AGRIBot or facts concerning the growing site accumulated through an AGRIBot. Optionally, the verbal exchange associate is every other AGRIBot. Optionally, the communication associate is a principal manage unit operable to monitor and manipulate one or greater AGRIBots. The imperative manage unit

is optionally a computing tool to be used by way of a human user.

5 Other aspect of the present invention comprising in an embodiment of the disclosure the sound analyzer accommodates a classifier that tactics the meditated acoustic sign registered by using the microphone to signify gadgets reflecting the acoustic sign. 10 Optionally, the classifier is operable to discover plant shape and distinguish crop from foliage, and/or to perceive functions of the contemplated acoustic sign that provide indication of quantity, health, and/or ripeness for harvesting, of the crop. Optionally, the classifier characterizes the detected object(s) the usage of a machine learning technique.

15 In an embodiment of the disclosure, the sensor module is mounted to the mobile platform, with the aid of way of example thru a robot arm, so that once the AGRiRobot is adjacent a plant meant for inspection, the sensor module can be translated and/or rotated independent of the mobile platform to facilitate illumination of the plant with the acoustic sign and reception of the acoustic sign pondered by the plant.

20 These and other objects, features, advantages and alternative aspects of the present invention will become apparent to those skilled in the art from a consideration of the following detailed description taken in combination with the accompanying drawings.

25 It will be apparent to persons of skill in the art that various of the foregoing aspects and/or objects, and various other aspects and/or objects disclosed herein, can be incorporated and/or achieved separately or combined in a single device, method, system, composition, article of manufacture, and/or improvement thereof, thus obtaining the benefit of more than one aspect and/or object, and that an embodiment may encompass none, one, or more than one but less than all of the aspects, objects, or features enumerated in the foregoing summary or otherwise disclosed herein. The disclosure hereof extends to all such combinations. In addition to the illustrative aspects, embodiments, objects, and features described above, further aspects, embodiments, objects, and features will become 30 apparent by reference to the drawing figures and detailed description. Also disclosed herein are various embodiments of related methods, devices, apparatus, compositions, systems, articles of manufacture, and/or improvements thereof. The foregoing summary is intended to provide a brief introduction to the subject matter of this disclosure and does

not in any way limit or circumscribe the scope of the invention(s) disclosed herein, which scope is defined by the claims currently appended or as they may be amended, and as interpreted by a skilled artisan in the light of the entire disclosure.

5 **BRIEF DESCRIPTION OF DRAWINGS**

10 The summary, as well as the following detailed description, is further understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there are shown in the drawing's exemplary embodiments of the invention; however, the invention is not limited to the specific methods, compositions, and devices disclosed. In addition, the drawings are not necessarily drawn to scale. In the drawings:

15 The detailed description is set forth with reference to the accompanying drawings. The drawings are provided for purposes of illustration only and merely depict example embodiments of the disclosure. The drawings are provided to facilitate understanding of the disclosure and shall not be deemed to limit the breadth, scope, or applicability of the disclosure. The use of the same reference numerals indicates similar, but not necessarily the same or identical components. However, different reference numerals may be used to identify similar components as well. Various embodiments may utilize elements or
20 components other than those illustrated in the drawings, and some elements and/or components may not be present in various embodiments. The use of singular terminology to describe a component or element may, depending on the context, encompass a plural number of such components or elements and vice versa.

25 Repeat use of reference characters in the present specification and drawings is intended to represent the same or analogous features or elements of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

30 Embodiments, of the present disclosure, will now be described with reference to the accompanying drawings.

Embodiments are provided so as to thoroughly and fully convey the scope of the present

disclosure to the person skilled in the art. Numerous details are set forth, relating to specific components, and methods, to provide a complete understanding of embodiments of the present disclosure. It will be apparent to the person skilled in the art that the details provided in the embodiments should not be construed to limit the scope of the present disclosure. In some embodiments, well-known processes, well-known apparatus structures, and well-known techniques are not described in detail.

The terminology used, in the present disclosure, is only for the purpose of explaining a particular embodiment and such terminology shall not be considered to limit the scope of the present disclosure. As used in the present disclosure, the forms "a," "an," and "the" may be intended to include the plural forms as well, unless the context clearly suggests otherwise. The terms "comprises," "comprising," "including," and "having," are open ended transitional phrases and therefore specify the presence of stated features, integers, steps, operations, elements, modules, units and/or components, but do not forbid the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof. The particular order of steps disclosed in the method and process of the present disclosure is not to be construed as necessarily requiring their performance as described or illustrated. It is also to be understood that additional or alternative steps may be employed.

The main embodiment of the present invention comprising an information base gets the real factors from a meteorological station and is dispatched indirectly by using wi-fi show. The real factors are balanced by strategies for a show exchanger structure worked in hardware and a GSM/GPRS flexible framework device. The electric power outfit of the meteorological station and embedded net of issues machine is self-proceeding with the use of economic force sources through daylight based cells that use a charge controller. The outside far away air station is applied the use of a Climate Shield which experiences assembles the utilization of far off mechanical aptitude information and gives estimations of barometric weight, relative clamminess, photovoltaic radiation and temperature, and besides has relationship with sensors of wind speed, heading, precipitation measure and a GPS for the territory. Actually, an atmosphere shield contains voltage regulators and sign mediators for all devices, where they are worked into the variables of the air station with facilitated power control, which joins a movement menu through a verbal exchange of consecutive ports. The cell machine is depicted by using veiling greater detachments and having more unmistakable security and less

vulnerability than various types of IoT systems, which is ideal for nurseries that are set in far off nation zones that are remote from the city locale. The watching and direct are obtained exactly or truly as shown by the customer's availability through a web programming or application based application, which joins the specific hardware and programming program courses of action. The estimations are obtained by methods for a show exchanger. The records are controlled and taken care of as per the estimation of ice and its got to underneath a number conditions. The joined system has a Windows IoT working structure. The picked up information is defragmented for use by techniques for the syntactic jargon analyzer realized on the contraption. The data is referenced through GPS correspondences, the use of a Remote Convention.

Also, that creates a Transmission Control Convention with Web Convention (TCP/IP) using a propelled PC for the subsequent far away affiliation and the portrayal of information to a faraway application. The embedded programming that is used to research data, the database is taken care of and the programming language is used for real factors combination through a host structure strolling around the machine is altered as a neuro-processor. Thus, the ice figure uses man-made cognizance, exceptionally the all out of significant acing and other plan frameworks that are gotten to at the distant application. Forecast and lead of ice fuses different segments, for instance, temperature at outside, tenacity outside, wind speed, photovoltaic radiation, soginess inside nursery, and in the long run the temperature of the air given inside the variable suggested as result control.

The temperature of the show is additionally solidified to choose the closeness of ice as a structure. Despite the standard quantitative appraisals, for instance, the mean, mode and well known deviation used to survey the overall execution of a model, the going with authentic records had been used to pick the noteworthy structure essentially reliant on the difference between the certifiable and the assessed characteristics.

The coefficient of goal through the percent in vogue error of the desire can be resolved thus evaluating with the suggested regard. For an ideal match, the coefficient of confirmation must be shut to 1. In latest years, there has been a bundle question on the Neural Systems. These computations fit for focusing from adventure primarily reliant on signs or records from abroad, the usage of an equivalent, controlled and adaptable

figuring framework. The execution furthermore, adaptability to the natural variables is by methods for programming programs redid into embedded programming program devices. These contraptions exist for calculation parallelism and apportioned memory. According to their definition, they are evaluating gadgets, in light of a numerical shape successful of portraying complex nonlinear associations among enter and yield educational assortments. Thus, their ability to dissect is reliably portrayed as a method that soothes out the overall execution of the system with regard to a given endeavor. Further can be seen as counts to get some answers concerning and mannequin any given estimations set. They are a non-standard instrument of real examination; by methods for which it is conceivable to get some answers concerning and make estimates about any records set. The inciting rule used contains straightly joining inputs and synaptic burdens.

One of the embodiment of the present invention comprising the limit setting of a mannequin used to imply a contraption is called Framework Recognizable verification.

The methods of understanding the machine are consistently organized into two head arrangements: diminish and dim field models. Appeared differently in relation to coordinate showing, which is directed by the physical laws of the structure, these plans are bountiful to assemble a numerical model that recognizes the part of the system isn't enjoyably grasped or the detect its properties exchange inconsistently. The dim field procedures are a piece of the mannequin where the limits are conspicuous to veritable physical guidelines.

The dull compartment procedure relates the numerically evaluated commitments to the intentional yields where the limits of the model are balanced despite any standard generous essentialness. Dim field plans no longer require prior understanding of the system, which can be a bit of leeway if the real factors on the components of the device is limited; regardless, it includes the issue of picking a sensible structure for the model. Another expansion of such models is the opportunity of procuring a colossal model with an amazingly little course of action of estimations. The model can be stimulated as new records are entered. Appeared differently in relation to a dim box model, the dim field methodology requires less time and effort to make. All things considered, in a dull field model, non-quantifiable systems or verifiable procedures are used to characterize the association among wellsprings of information and yields.

The Neural System Model is picked by three segments:

- (1) the topological structure of the system;
- (2) neuronal qualities; and
- (3) the figuring of pouring.

Thusly, the preparation of the machine is done through a methodology called estimation dependent on the regressive spread which is an overseen figure. This method requires a lot of teaching plans, and their relating supported yields, and self-governing changes the connection loads between the neurons.

The other embodiment of the present invention having the direction rule for in switch causing between layers is depicted. The system awards with respect to unclear and dispersed data to the degree sets, these empower you to portray by virtue of something is ensured in them by procedures for assigning a charge some spot in the extent of one and zero or isn't in a zero the numerical condition. The water advancement process is depicted by strategies for the separation in thickness among cold and warm water. This segment, in the closeness ice to surrounding a plasticized igloo on the nursery surface. As requirements be, these physical spots of water are mauled through the water distribution framework for taking steps to ice halting the cooling of the croplands by techniques for the water surface hardening (freezing of water surface), because of reality the charge of substitute in the water thickness doesn't widen tirelessly with changes in temperature inner the nursery, keeping up a novel inside temperature (regularly more blasting than the yard trademark temperature) inside the set plastic surface paying little heed to the low temperature that happens indirectly to the plastic floor of greenhouse.

The present invention comprising the IoT and Artificial Intelligence system methods helps in robot driver system attaining this functionality followed by functions of each components listed as the follows:

- a) Multiple functionalities incorporated inside the full of intelligent system that carries out the process of integration of devices and transmission of communication through the wireless Protocol
- b) The entire process is driven by using the solar powered battery that

control and act as the driving force of system

c) Data collected and gathered on two basis: manual and automatic calculation of process which is stored in database, analyzed and drives the system towards the control measure

d) Control functions can be either manual or automatic at the remote side. These functionalities are accessed through GPS and data are received and manipulated there at the other end.

e) Classification of input and output variables are accessed thereby the value determines the properties of irrigation. Based on the deep learning and neural network features the process are classified into different categories based on the frost level.

One of the embodiment of the disclosure relates to supplying an agricultural robotic this is configured to navigate an agricultural developing site, including a greenhouse, open area, or orchard, to find and inspect flowers developing on the website online. In an embodiment of the disclosure the agricultural robotic, hereinafter also referred to as an AGRIBot, comprises an acoustic sensor module mounted to an self sufficient cellular platform, with the aid of way of example an self sustaining floor automobile or an self reliant aircraft. The acoustic sensor module contains a speaker controllable to transmit an acoustic signal and a microphone operable to acquire and sign up an acoustic sign. And present invention comprising an embodiment of the disclosure, the speaker and microphone are managed by way of a sound analyzer, which may be operable to manipulate the speaker and microphone, as well as analyze sound registered by using the microphone, in one or both of an echolocation mode and a communicate mode.

Other embodiment of the present invention comprising in the echolocation mode, the sound analyzer is operable to govern the speaker to transmit an acoustic sign comprising a wide spectrum beam of acoustic electricity, optionally characterised with the aid of ultrasonic frequencies, to light up the growing website online with acoustic electricity, and examine reflected acoustic indicators which are registered by way of the microphone. The sound analyzer can be operable to manner the pondered acoustic sign to map a planting sample of the vegetation within the growing site and locate plants for inspection, in addition to optionally locate different objects within the growing web page. In an

embodiment of the disclosure, the cellular platform is attentive to the sound analyzer to navigate the planting pattern and role the AGRIBot for positive inspection of the flora.

Another aspect of the present invention in the conversation mode, the sound analyzer is operable to govern the speaker to transmit acoustic conversation indicators to a conversation partner, and process acoustic conversation signals acquired from a verbal exchange partner by means of the microphone. Optionally, the acoustic conversation indicators include operational commands for an AGRIBot or facts concerning the growing site accumulated through an AGRIBot. Optionally, the verbal exchange associate is every other AGRIBot. Optionally, the communication associate is a principal manage unit operable to monitor and manipulate one or greater AGRIBots. The imperative manage unit is optionally a computing tool to be used by way of a human user.

Other embodiment of the present invention comprising in an embodiment of the disclosure the sound analyzer accommodates a classifier that tactics the meditated acoustic sign registered by using the microphone to signify gadgets reflecting the acoustic sign. Optionally, the classifier is operable to discover plant shape and distinguish crop from foliage, and/or to perceive functions of the contemplated acoustic sign that provide indication of quantity, health, and/or ripeness for harvesting, of the crop. Optionally, the classifier characterizes the detected object(s) the usage of a machine learning technique.

In an embodiment of the disclosure, the sensor module is mounted to the mobile platform, with the aid of way of example thru a robot arm, so that once the AGRIBot is adjacent a plant meant for inspection, the sensor module can be translated and/or rotated independent of the mobile platform to facilitate illumination of the plant with the acoustic sign and reception of the acoustic sign pondered by the plant.

In an embodiment of the disclosure, the classifier may also represent gadgets reflecting a return chirp by changing a spectrogram of the return chirp right into a frequency area representation that expresses depth of the return chirp (y-axis) in terms of the frequencies (x-axis) that make up the return chirp. Differences in cloth residences and shape of gadgets may also bring about differences in how sure frequencies of an acoustic signal are reflected. In turn, differences in the sound-reflection homes of different item may be

expressed as differences in intensity of specific degrees of frequencies represented inside the go back chirp. Frequency-based variations in sound-reflective houses can be successfully detected in a frequency domain illustration.

5 Throughout this specification the word “comprises”, or variations such as “comprises” or “comprising”, will be understood to imply the inclusion of a stated element, step, or group of elements, steps, but not the exclusion of any other element, step, or group of elements, or steps.

10 Encoding the software modules presented herein additionally may transform the bodily structure of the pc-readable media presented herein. The specific transformation of physical shape might also rely upon different factors, in unique implementations of this description. Examples of such factors may also encompass, but are not constrained to, the era used to implement the computer-readable media, whether or not the laptop-readable
15 media is characterized as number one or secondary garage, and so on. For instance, if the pc-readable media is carried out as semiconductor-based reminiscence, the software program disclosed herein can be encoded at the laptop-readable media through reworking the physical state of the semiconductor memory. For instance, the software may additionally transform the state of transistors, capacitors, or different discrete circuit
20 factors constituting the semiconductor reminiscence. The software program also may additionally rework the physical kingdom of such components with the intention to shop records thereupon.

As another instance, the laptop-readable media disclosed herein can be applied using
25 magnetic or optical generation. In such implementations, the software program presented herein may additionally rework the bodily nation of magnetic or optical media, while the software program is encoded therein. These adjustments may additionally encompass altering the magnetic traits of unique locations inside given magnetic media. These variations also may also encompass changing the bodily functions or traits of unique
30 places inside given optical media, to alternate the optical traits of these locations. Other differences of physical media are possible with out departing from the scope and spirit of the existing description, with the foregoing examples provided only to facilitate this dialogue.

In mild of the above, it have to be liked that many forms of physical differences take location inside the pc structure so that it will store and execute the software program components presented herein. It also need to be appreciated that the computer structure
5 may additionally include other varieties of computing gadgets, consisting of hand held computers, embedded laptop structures, non-public virtual assistants, and different forms of computing gadgets acknowledged to those skilled in the art. It is likewise contemplated that the computer architecture might not include all of the additives shown herein, may encompass other components that aren't explicitly shown herein, or might also make use
10 of an architecture completely extraordinary than that proven herein.

While considerable emphasis has been placed herein on the components and component parts of the preferred embodiments, it will be appreciated that many embodiments can be made and that many changes can be made in the preferred embodiments without departing
15 from the principles of the disclosure. These and other changes in the preferred embodiment as well as other embodiments of the disclosure will be apparent to those skilled in the art from the disclosure herein, whereby it is to be distinctly understood that the foregoing descriptive matter is to be interpreted merely as illustrative of the disclosure and not as a limitation.

20 Modifications to embodiments of the invention described in the foregoing are possible without departing from the scope of the invention as defined by the accompanying claims. Expressions such as “including”, “comprising”, “incorporating”, “consisting of”, “have”, “is” used to describe and claim the present invention are intended to be construed in a
25 non-exclusive manner, namely allowing for items, components or elements not explicitly described also to be present. Reference to the singular is also to be construed to relate to the plural. Numerals included within parentheses in the accompanying claims are intended to assist understanding of the claims and should not be construed in any way to limit subject matter claimed by these claims. While the present disclosure has been
30 described with respect to a limited number of embodiments, those skilled in the art, having benefit of this disclosure, will appreciate that other embodiments may be devised which do not depart from the scope of the disclosure as described herein. Accordingly, the scope of the present disclosure should be limited only by the attached claims.

5 Although embodiments have been described in language specific to structural features and/or methodological acts, it is to be understood that the disclosure is not necessarily limited to the specific features or acts described. Rather, the specific features and acts are disclosed as illustrative forms of implementing the embodiments. Conditional language, such as, among others, “can,” “could,” “might,” or “may,” unless specifically stated otherwise, or otherwise understood within the context as used, is generally intended to convey that certain embodiments could include, while other embodiments do not include, certain features, elements, and/or steps. Thus, such conditional language is not generally intended to imply that features, elements, and/or steps are in any way required for one or more embodiments or that one or more embodiments necessarily include logic for deciding, with or without user input or prompting, whether these features, elements, and/or steps are included or are to be performed in any particular embodiment.

**TITLE OF THE INVENTION –
“A SMART DEVICE FOR
MAINTAIN GREENHOUSE CONTROLLING ENVIRONMENTS
PARAMETERS.”**

CLAIMS,

We Claims,

[CLAIM 1] A smart device for maintain greenhouse controlling environments parameters comprising:

- a) acquiring plant boom variables from sensors located to accumulate plant growth data from a plurality of flowers and transmitting this information to a pc device;
- b) obtaining environmental variables from sensors located to gather environmental records from an surroundings related to every of the plurality of vegetation and transmitting this statistics to the computer device;
- c) figuring out, by way of the pc machine, plant boom variables and environmental variables associated with best plant boom;
- d) adjusting, by using the pc device, plant increase variables and environmental variables to imitate the premier plant increase plant increase variables and environmental variables;
- e) sensors are selected from the group consisting of cameras, ultrasounds, light sensors, temperature sensors, humidity sensors, airflow sensors, height sensors, laser measuring devices, infrared (IR) detectors, water sensors, pH sensors, electrical conductivity (EC) sensors, dissolved oxygen (DO) sensors, chlorine sensors, turbidity sensors, water flow rate sensors, occupancy sensors, weight gauges, strain gauges, and combinations thereof.

[CLAIM 2] The smart device for maintain greenhouse controlling environments parameters as claimed in claim 1, wherein function of water pump for

irrigation purposes and deep learning methods that carry out the process of learning the situation and crop details are done by neural networks that support hidden layers of information that contributes to the process to be exempted at a deeper level.

- [CLAIM 3] The smart device for maintain greenhouse controlling environments parameters as claimed in claim 1, wherein guidance system operable to control the autonomous mobile platform responsive to the location in the growing site of the at least one plant located responsive to the registered reflection.
- [CLAIM 4] The smart device for maintain greenhouse controlling environments parameters as claimed in claim 1, wherein a device for transmitting data to a router, server, processor, or controller and update to the data as per given by users and save the record data also.
- [CLAIM 5] The smart device for maintain greenhouse controlling environments parameters as claimed in claim 1, wherein each of the one or more remote computer systems are selected from the group consisting of personal computers, slate or tablet personal computers, telephones, Smartphones, personal digital assistants, and combinations thereof.

Dated 15th April 2021.