



DESIGN AND DEVELOPMENT OF AUTOMATED EGG HATCHING EQUIPMENT



MINI PROJECT REPORT

Submitted by

CHARAN.S	710420114006
SURIYAPRAKASH.E	710420114024
ALBERT ENSTIEN.Y	710420114302
RAVIND PRABU.G	710420114324

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

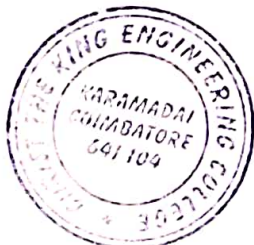
in

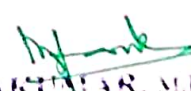
MECHANICAL ENGINEERING

CHRIST THE KING ENGINEERING COLLEGE, KARAMADAI

ANNA UNIVERSITY : CHENNAI 600 025

JUNE 2023




Dr. M. JEYAKUMAR, M.E., Ph.D.
PRINCIPAL
CHRIST THE KING ENGINEERING COLLEGE,
Chikkarampalayam Village,
Karamadai, Mettupalayam Taluk,
Coimbatore - 641 104.

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE


Certified that report “DESIGN AND DEVELOPMENT OF AUTOMATED EGG HATCHING EQUIPMENT” is the bonafide work of CHARAN.S (710420114006), SURIYAPRAKASH.E (710420114024), ALBERT ENSTINE.Y (710420114302), RAVIND PRABU.G (710420114324), who carried out the project work under my supervision.

SIGNATURE


Prof. R. HARI PRASATH
HEAD OF THE DEPARTMENT

Department of Mechanical Engineering
Christ the King Engineering College
Coimbatore – 641 104

SIGNATURE


Prof. D. DOMNIC
SUPERVISOR
Assistant Professor

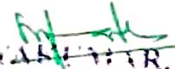
Department of Mechanical Engineering
Christ the King Engineering College
Coimbatore – 641 104

Submitted for Anna University project viva-voce examination held on 02-06-2023


INTERNAL EXAMINER


EXTERNAL EXAMINER

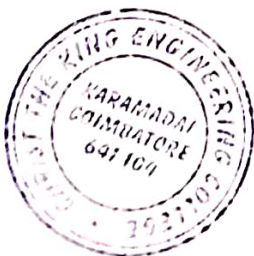


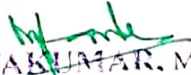

D.M. JEYAKUMAR, M.E., Ph.D.
PRINCIPAL
CHRIST THE KING ENGINEERING COLLEGE,
Chikkarampalayam Village,
Karamadai, Mettupalayam Taluk,
Coimbatore - 641 104.

ABSTRACT

Meeting the high demand for poultry products calls for the use of artificial egg hatcheries but the backyard and small-scale poultry farmers are constrained by the dependence on natural incubation or on commercial hatcheries for young birds for breeding. In this system an incandescent bulb heat source hatching equipment is utilized to hatch hen eggs. The hatching system is an Arduino microcontroller-based, which controls the heat and humidity. The prevailing conditions in the hatching system (temperature and the humidity) are displayed on a 16x2 LCD screen.

For the hen farmers, hatching the eggs in a big number is a problem to produce the chicken which incubate manually. The hatching system based on Arduino microcontroller can control the temperature, humidity automatically. The hen eggs have been successfully hatch normally is 87.55%, 0.41% hatch but defective, 1.84% hatch but dead, and 10.20% not hatch by 490 eggs in 21 days of incubate period.



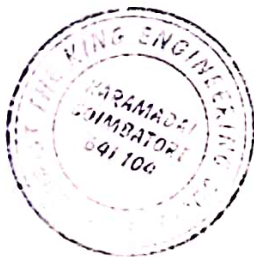

Dr.M.JEYAKUMAR, M.E., Ph.D.
PRINCIPAL
CHRIST THE KING ENGINEERING COLLEGE,
Chukkarampalayam Village,
Karamadai, Mettupalayam Taluk,
Coimbatore - 641 104.


CHAPTER -6

6 CONCLUSION

This research has been presented the design of automated hatching equipment based on Arduino microcontroller. The system can control the temperature, humidity of the egg automatically. For monitoring process, LCD can help the farmers to monitor the hatching system from a distance at any point temperature and humidity values will be displayed on the 16 X 2 LCD screen. With the working of the relays and control of the incandescent lamp an energy efficient hatching system has been designed and fully implemented.

In the future, we will be implementing the solar panel for power . Since in the existing system more electricity is consumed due to the incandescent lamp and an internet of Things (IoT) system to enable the monitoring and control of the whole system on a 4G cell phone. This would enable the operator remotely access conditions in the hatching system as well as to shut it down or switch it on through a cell phone.




Dr.M.JEYAKANTHAR, M.E.,Ph.D.
PRINCIPAL
CHRIST THE KING ENGINEERING COLLEGE,
Chikkarampalayam Village,
Karamada, Mettupalayam Taluk,
Coimbatore - 641 104.