



# PQAC OUTCOMES

## 2023-24

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SULLAMUSSALAM SCIENCE COLLEGE,  
AREEKODE

# PQAC OUTCOMES

## 2023-24

### Consolidated Outcomes of UG/PG Project during 2023-24 academic year

Items	UG	PG	Total
Participations National Seminar/ Conferences	4	82	86
Presentations National Seminar/ Conferences	1	48	49
Participations International Seminar/ Conferences	90	72	152
Presentations International Seminar/ Conferences	14	40	54
No. of Authors having ISSN/ISBN publications	86	13	99
No. of Authors having UGC Care/Scopus/ABDC/Peer-reviewed Journals	7	3	10
No of Patents(filed/applied)/ Innovations	0	1	1
No. of Best paper/presentation awards (Outside the College)	0	1	1
No. of Project related events conducted during the year	26	13	39
No. of Department Journal with/without ISBN	3	1	4
No. of departments have Project Repository (soft copy)	5	5	10

# PATENT



**SSC**  
SINCE 1995

CONGRATULATIONS

FOR FILING PATENT AS PART OF PG PROJECT



**MR. BUSHAIR ALI**  
SECOND YEAR STUDENT  
M. SC. PHYSICS

JUNE  
2024

**DEPARTMENT OF PHYSICS**  
SULLAMUSSALAM SCIENCE COLLEGE, AREEKODE

# STUDENT PUBLICATIONS

# PHYSICS

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journal homepage: [www.elsevier.com/locate/biombioe](http://www.elsevier.com/locate/biombioe)



## Piezoresistivity in pyrolyzed coconut fiber

**IMPACT FACTOR – 5.8**

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### ARTICLE INFO

#### Keywords:

Pyrolyzed carbon

Coconut fiber

Electrical conductivity

Piezoresistive behavior

### ABSTRACT

Pyrolyzed carbon materials give fascinating solutions for many problems in the current research world. The locally available organic wastes can be pyrolyzed and tuned for their properties for various applications. Coconut-based materials such as shell and fiber have shown promising results in different technological applications. However, a detailed study of the structural and property evolution of these materials has not been carried out yet. In this work, the evolution of conductivity and piezoresistivity of coconut fiber-derived carbon is studied. Coconut fiber is pyrolyzed at different temperatures 600 °C, (CCP600) 800 °C (CCP800) and 1000 °C (CCP1000) to produce carbon fiber. Electrical conductivity experiments show differences between CCP600, CCP800 and CCP1000, with CCP600 displaying much lower conductivity at approximately (0.7 S/m) compared to CCP800 ( $1 \times 10^3$  S/m) and CCP1000 ( $1.4 \times 10^3$  S/m). Conversely, CCP600 demonstrates impressive piezoresistive characteristics, exhibiting significant resistance changes even under minimal strain. The gauge factor for the coconut fiber-derived carbon was found to be 4.1 for CCP600, 1.0 for CCP800, and 0.3 for CCP1000. Further, the powdered carbon samples show an increase in the gauge factor to a range of 36.8, which makes CCP600 well-suited for sensor applications requiring precise sensing capabilities. The present study suggests that CCP600, with its low cost and ease of fabrication, is a promising material for low-budget sensor applications.

# STUDENT PUBLICATIONS

## COMPUTER SCIENCE

SSRG International Journal of Recent Engineering Science  
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*Original Article*

## Study of An AI-Powered Vehicle Monitoring System: An Ensembled Approach for Intelligent Surveillance

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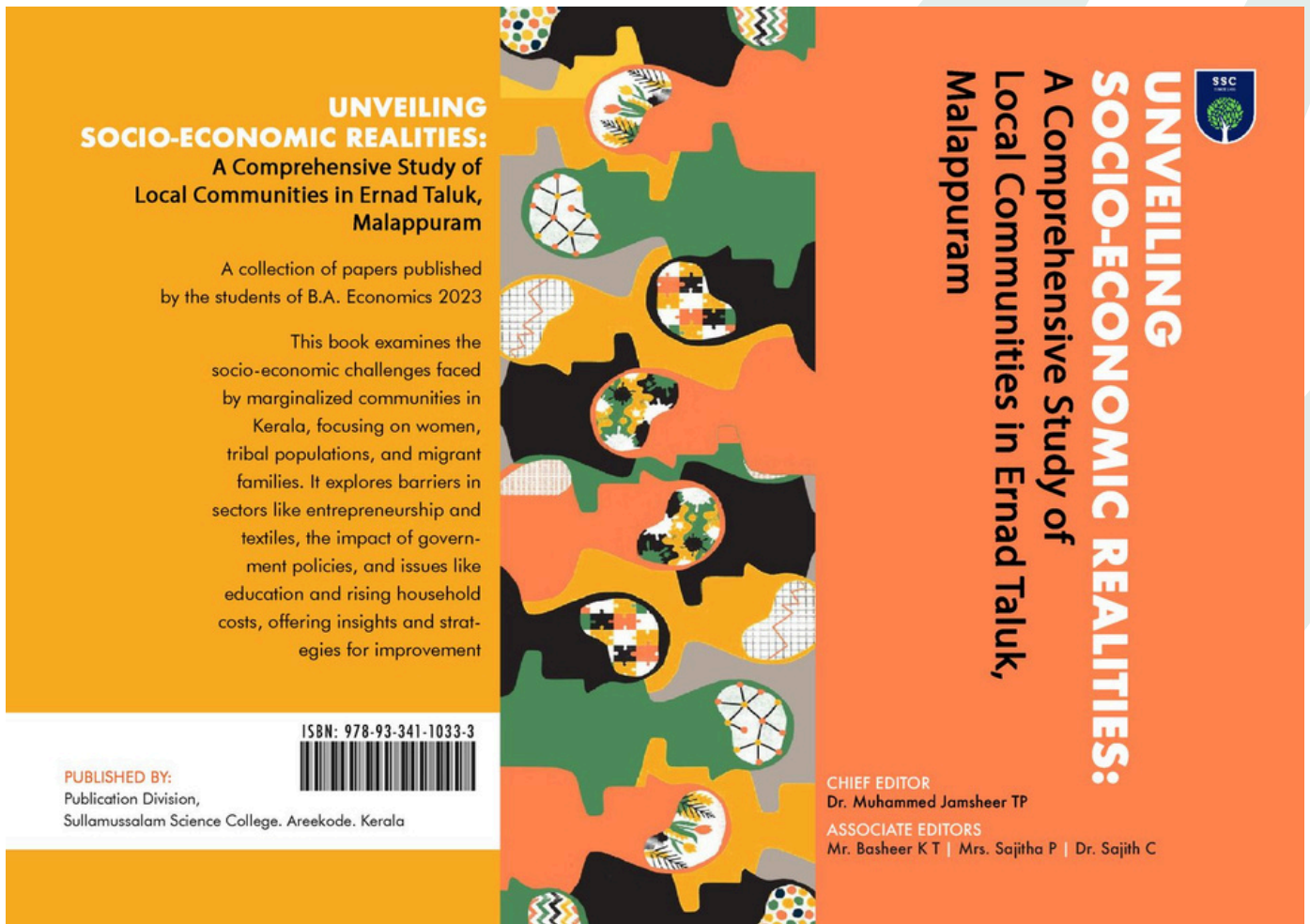
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**Abstract** - This paper presents an AI-powered vehicle Monitoring System using EasyOCR, OpenCV, and HaarCascade algorithms. The project is the detection of the license plate of a vehicle entering a gate and saving the date, time, and license plate number in a database to enhance the security of the institution. The system is good at detecting vehicle license plates in real-time. EasyOCR is used for reading license plates and we used it to help the system track vehicles better. OpenCV provides computer vision capabilities to process images and helps in real-time detection. We used the HaarCascade machine learning object detection method to identify objects in images to detect license plates of vehicles. Also provides a simple and attractive graphical user interface for users to access vehicle information. This system can be applicable in institutions, hospitals, and factories. This will be helpfull to others who are into making vehicle detection systems.

**Keywords** - EasyOCR, HaarCascade, Vehicle monitoring, Computer vision.

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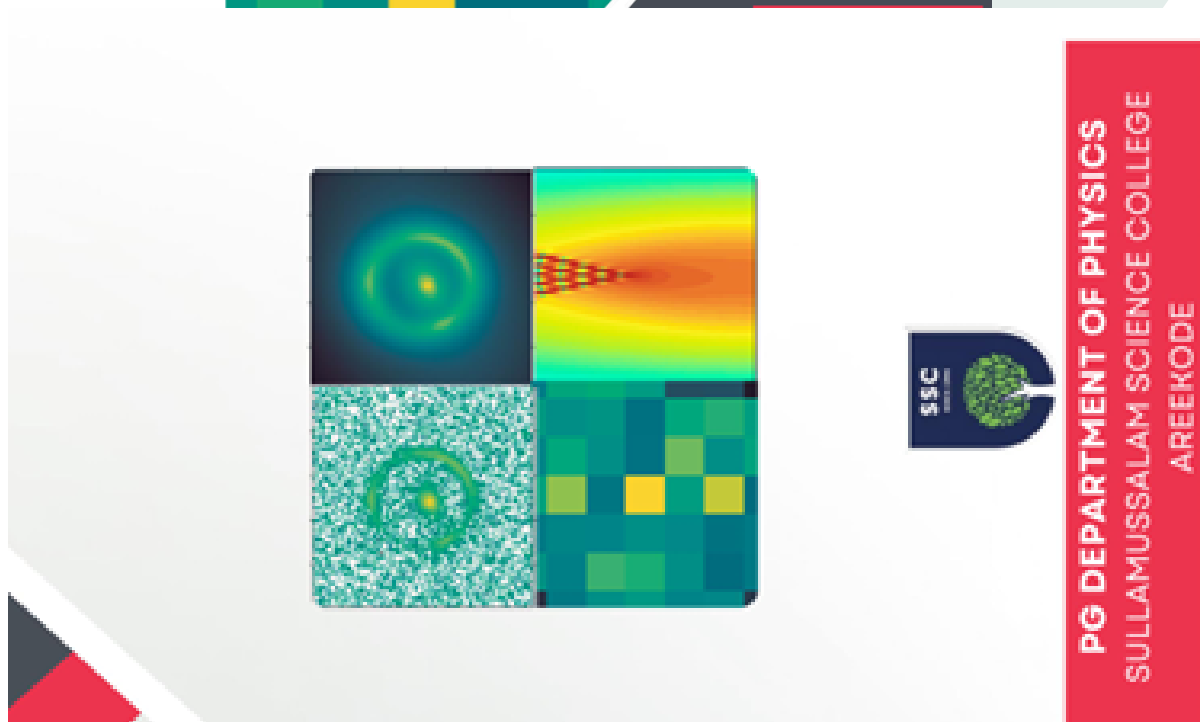
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