



राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

**NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL**

*An Autonomous Institution of the University Grants Commission*

# *Certificate of Accreditation*

*The Executive Committee of the  
National Assessment and Accreditation Council  
is pleased to declare*

*K. S. Institute of Technology  
Raghuvanahalli, Kanakapura Main Road, Bangalore Urban,  
affiliated to Visvesvaraya Technological University, Karnataka as  
Accredited*

*with CGPA of 3.26 on four point scale*

*at A<sup>+</sup> grade*

*valid up to August 03, 2029*

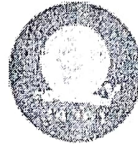
*Date : August 04, 2024*



*Director*

*Principal*

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K.S. INSTITUTE OF TECHNOLOGY  
BENGALURU - 560 109.**



# राष्ट्रीय प्रत्यायन बोर्ड

चौथा तल, ईस्ट टावर, एन. बी. सी. प्लेस, भीष्म पितामह मार्ग, प्रगति विहार, लोधी रोड, नई दिल्ली -110003  
**NATIONAL BOARD OF ACCREDITATION**  
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File No. 25-225-2020-NBA

Date 28-05-2024

To  
The Principal  
KS Institute of Technology,  
No. 14, Raghuvanahalli, Kanakapura Road,  
Bangalore-560062, Karnataka

Subject: Further accreditation status on the basis of Compliance Report of the programs applied by KS Institute of Technology, No. 14, Raghuvanahalli, Kanakapura Road, Bangalore-560062, Karnataka.  
Sir,

This is regarding Compliance Reports submitted by KS Institute of Technology, No. 14, Raghuvanahalli, Kanakapura Road, Bangalore-560062, Karnataka for the UG Engineering programs which were accredited by NBA in Tier-II for academic years 2021-22 to 2023-24 i.e. upto 30/06/2024.

2. An Expert Team conducted data verification of the programs on 20<sup>th</sup> April, 2024. The report submitted by the Expert Team was considered by the concerned Committees constituted for the purpose in NBA. The Competent Authority in NBA has approved the following accreditation status to the programs as given in the table below:

Sl. No	Name of the Program(s) (UG)	Basis of Evaluation	Accreditation Status	Period of validity	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1.	Computer Science & Engineering	Tier-II June 2015 Document	Accredited	Academic Years 2024-2025 to 2026-2027 i.e. upto 30-06-2027	Accreditation status granted is valid for the period indicated in Col.5 or till the program has the approval of the Competent Authority, whichever is earlier
2.	Electronics & Communication Engineering		Accredited		

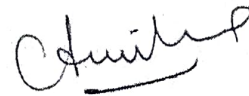
3. It may be noted that only students who graduate during the validity period of accreditation, will be deemed to have graduated with an NBA accredited degree.

4. The programs have been granted accreditation for further 3 years. KS Institute of Technology, No. 14, Raghuvanahalli, Kanakapura Road, Bangalore-560062, Karnataka should submit fresh online application under SAR Tier II Document through eNBA portal not before five months from the expiry of validity of accreditation mentioned above.

5. The accreditation status awarded to the programs as indicated in the above table does not imply that the accreditation has been granted to KS Institute of Technology, No. 14, Raghuvanahalli, Kanakapura Road, Bangalore-560062, Karnataka as a whole. As such the Institution should nowhere along with its name including on its letter head etc. write that it is accredited by NBA because it is program accreditation and not Institution accreditation. If such an instance comes to NBA's notice, this will be viewed seriously. Complete name of the program(s) accredited, level of program(s) and the period of validity of accreditation, as well as the Academic Year from which the accreditation is effective should be mentioned unambiguously whenever and wherever it is required to indicate the status of accreditation by NBA.

6. The accreditation status of the above programs is subject to change on periodic review, if needed by the NBA. It is desired that the relevant information in respect of accredited programs as indicated in the table in paragraph 2, appears on the website and information bulletin of the Institute.

  
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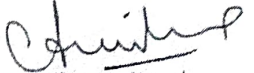
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Tel: +91 11 2436 0620-22, 2436 0654; Telefax: +91 11 4308 4903  
Bangalore, 560 109  
Website: <http://www.nbaind.org> | Email: [membersecretary@nbaind.org](mailto:membersecretary@nbaind.org)

7. The accreditation status awarded to the programs as indicated in table in paragraph 2 above is subject to maintenance of the current standards during the period of accreditation. If there are any changes in the status (major changes of faculty strength, organizational structure etc.), the same are required to be communicated to the NBA, with an appropriate explanatory note.

8. A copy each of the Report of the Visiting Team in respect of the above programs is enclosed.


Yours faithfully,

  
(Dr. Anil Kumar Nassa)  
Member Secretary

Encls: 1. Copy each of the Report of the Visiting Team in respect of the programs.

Copy to:

1. The Registrar,  
Visvesvaraya Technological University  
Jnana Sangama, Belgaum-590018, Karnataka
2. Principal Secretary (Hr. & Tech. Education)  
Govt. of Karnataka, K.G.S. 6th Floor  
M.S. Building, R No. 645  
Dr. B.R. Ambedkar Road, Bangalore-560001, Karnataka
3. Director Technical Education  
Tantrik Shikshan Bhawan, Palace Road  
Bangalore-560001, Karnataka
4. Master Accreditation Folder of the State
5. Accreditation File

  
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### UNIVERSITY RESULTS

#### VII SEMESTER

Sl. No	Branch	% of Pass	
		2023	2024
1	ME	100	92.31
2	ECE	96.19	96.43
3	CSE	98.31	100
4	AIML	-	97.62

  
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### RESEARCH GUIDE

Sl.No	Research Guides	Department
1	Dr. Rekha B Venkatapur	Computer Science and Engineering
2	Dr. Dayananda R B	Computer Science and Engineering
3	Dr. Deepa .S.R	Computer Science and Design
4	Dr. Vijayalaxmi Mekali	Computer Science and Engineering
5	Dr.Chanda.V.Reddy	Computer and Communication Engineering
6	Dr. P N Sudha	Electronics and Communication Engineering
7	Dr. Sudarshan B	Electronics and Communication Engineering
8	Dr. Rekha N	Electronics and Communication Engineering
9	Dr. Dinesh Kumar D S	Electronics and Communication Engineering
10	Dr. Devika B	Electronics and Communication Engineering
11	Dr. Electa Alice Jayarani	Electronics and Communication Engineering
12	Dr. Dilip Kumar K	Mechanical Engineering
13	Dr. Umashankar M	Mechanical Engineering
14	Dr. Girish T R	Mechanical Engineering
15	Dr. Nagaprasad K S	Mechanical Engineering
16	Dr. Saleem Khan	Mechanical Engineering
17	Dr. Nirmala	Mechanical Engineering
18	Dr. Kiran Kumar S R	Chemistry
19	Dr. Jalaja P	Mathematics
20	Dr. Sheeja Krishnan	Physics

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# Evolution of SnO<sub>2</sub> nanoparticles for the electrochemical sensing of dopamine including photocatalytic toxic dyes degradation

S.R. Kiran Kumar<sup>a</sup>, Harisha S<sup>ab,\*</sup>, Jalaja P<sup>b</sup>, B.K. Jayanna<sup>c</sup>, K. Yogesh Kumar<sup>d</sup>, M.S. Anantha<sup>e</sup>

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<sup>b</sup> Department of Mathematics, K.S. Institute of Technology, Bengaluru, 560109, India

<sup>c</sup> Department of Chemistry, BNMIT, Bengaluru, 560070, Karnataka, India

<sup>d</sup> Department of Chemistry, School of Engineering and Technology, Jain University, Jain Global Campus, Jakkasandra Post, Kanakpura Taluk, Ramanagara 562112, India

<sup>e</sup> Department of Chemistry, HKBKCE, Bengaluru, 560070, Karnataka, India

## ARTICLE INFO

### Keywords:

Dopamine

SnO<sub>2</sub> nanoparticles

Modified carbon paste electrode

## ABSTRACT

In the present study, SnO<sub>2</sub> nanoparticles were synthesized, and their structural features were evaluated by X-ray diffraction (XRD), scanning electron microscopy (SEM), energy dispersive X-ray analysis (EDX) and transmission electron microscopy (TEM) techniques. Modified electrodes (MCPE) were prepared and utilized to access the electrochemical behaviour of dopamine. This study was conducted in a phosphate buffer solution with a pH value of 7.2. The results indicate that the modified carbon paste electrode (MCPE), with a high active surface area, exhibited excellent electrochemical sensing properties and demonstrated good reproducibility and high sensitivity for the electrochemical determination of DA. Potentially interfering compounds were tested at the surface of the proposed sensor, confirming that, they did not interfere with the determination of DA under optimum condition. Additionally, the photocatalytic properties of SnO<sub>2</sub> were evaluated in degradation of cationic and anionic dyes. It was concluded that the higher photocatalytic activity in SnO<sub>2</sub> nanocomposites was attributed to their porosity and high surface area.

## 1. Introduction

Dopamine (3,4-dihydroxyphenethylamine), a biologically important organic compound belonging to catecholamine and phenethylamine families, plays a key role in brain and body metabolism of the human system. The functions of dopamine includes, cardiovascular, central nervous, renal and hormonal systems proving its importance in human metabolism [1,2]. Imbalances in the dopamine levels can lead to various disorder, such as Parkinson's disease, Tourette syndrome, Dementia, schizophrenia and attention deficit hyperactivity disorder (ADHD) [3, 4]. For neurophysiological analysis or diagnosis, controlling the concentration of DA is necessary. Various techniques have been developed over the past couple of decades for the selective and sensitive detection of DA, including chemiluminescence, fluorimetry, capillary electrophoresis, mass spectrographic and ion chromatography [5,6], etc. However, electrochemical process have gained widespread interest compared to the aforementioned techniques due to several advantages, such as rapid identification, ease, reproducibility, remarkable

cost-effectiveness, non-destructiveness [7,8].

The easier oxidation of dopamine (DA) at the surface of the electrode is due to its electro-active nature; therefore, electro-oxidation-based electro-analysis of DA has been commonly proposed. The coexisting components in the samples may cause serious external interference on the bare working electrode. In this regard, various types of chemically modified electrodes incorporating polymers, metal ions, and carbon based nanoparticles, have been developed in recent years and tested for advancement of accuracy and sensitivity [9–12]. Generally, the working electrodes are used in electrochemical sensor and biosensors as an electrode materials [13–15]. The key benefits of the carbon paste electrode include the simple preparation process, the creation of a fresh surface for detection and the production of low residual current in large potential windows. Furthermore, they exhibit strong electrical conductivity and mechanical strength due to their high accessible surface area. Moreover, these carbon paste electrodes can be doped with organic and inorganic molecules with large  $\pi$ -conjugation, thereby improving the activity and accuracy of drug sensing [16–19].

\* Corresponding author.

E-mail address: [harish.ukkunda@gmail.com](mailto:harish.ukkunda@gmail.com) (H. S).

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Available online 7 January 2024

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### KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

47 th series of Student Project Programme (SPP): 2023-24

Sl. No	PROPOSAL REFERENCE NO.	PROJECT TITLE	BRANCH	NAME OF THE GUIDE (S)	NAME OF THE STUDENT (S)
1	47S_BE_3730	Prevention And Detection Of Botnet Attacks	Artificial Intelligence And Machine Learning	Mrs. Renuka Patil	Ms. Yashila R. Mr. Gurudeep R. Ms. Yogitha S. Mr. V. Varun
2	47S_BE_3782	Deepfake Creation And Detection For Multimedia Content	Artificial Intelligence And Machine Learning	Ms. Lakshmi K. K.	Ms. Rupa Rajasri Puthineedi Ms. M.Divyashree Ms. Poornima M. C. Ms. Tanmayee R.
3	47S_BE_1631	Cyber Aparadha Sambanditha Kaanunu Salahe (CAS-KS)	Computer Science And Engineering	Dr. Rekha B. Venkatapur	Ms. Ganashree K. Ms. Ganashree G. M. Ms. Dhanya Sharanya Shree R.

  
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neelam patil radhika &lt;npradhika.chem@gmail.com&gt;

## Fwd: Proposal Submission Confirmation

Shobha G &lt;shobhag@sapthagiri.edu.in&gt;

Fri, Jun 21, 2024 at 1:00 PM

To: "shoha.g Gowda" <shohari1983@gmail.com>, neelam patil radhika <npradhika.chem@gmail.com>, "radhikanp@ksit.edu.in" <radhikanp@ksit.edu.in>

----- Forwarded message -----

From: **vgst.donotreply@karnataka.gov.in** <vgst.donotreply@karnataka.gov.in>

Date: Fri, 21 Jun, 2024, 12:58 pm

Subject: Proposal Submission Confirmation

To: shohari &lt;shobhag@sapthagiri.edu.in&gt;

Dear Dr Shobha G,

Your Proposal has been submitted successfully at Vision Group on Science and Technology Portal

Your Proposal details are as below.

VGST Reference Number **VRN/003942/23-24**

Scheme **Early Career Research Award**

Proposal Title **Nanobiohybrid-Siderophore Bacterial Carriers for Enhancing Nutrient Uptake and Improved plant yield attributes of Lycopersicum esculentum**

You have attached the below listed documents.

File Name	Document Type	Description
SG-PAN.docx	PAN Card Copy	SG-PAN
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SG-EX.pdf	Experience Certificate (For MTech)	SG-EX
Radhika-EX.pdf	Others	Radhika-EX
Radhika-Certificate.pdf	Others	Radhika-Certificate
Radhika-PAN.pdf	Others	Radhika-PAN
Endorsement.pdf	Duly Signed & Scanned Copy of Endorsement from the Head of the College/Institution	Endorsement
PART-A.pdf	Part-A	PART-A
Institutional Support.pdf	Others	Institutional Support
Methodolgy.pdf	Others	Methodolgy
Scanned Application.pdf	Duly Signed & Scanned Copy of Application Form	Scanned Application
Undertaking.pdf	Duly Signed & Scanned Copy of Undertaking from Principal Investigator And Co-Principal Investigator	Undertaking





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Centre for Outreach and Digital Education, IITM

Feb-Apr 2024  
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**Prof. Andrew Thangara**  
NPTEL Coordinator  
IIT Madras



Indian Institute of Technology Madras



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Online Assignments	24.31/25	Proctored Exam	44.25/75
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Total number of candidates certified in this course: **12432**

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Centre for Outreach and Digital Education, IITM

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**CERTIFICATE  
OF APPRECIATION**

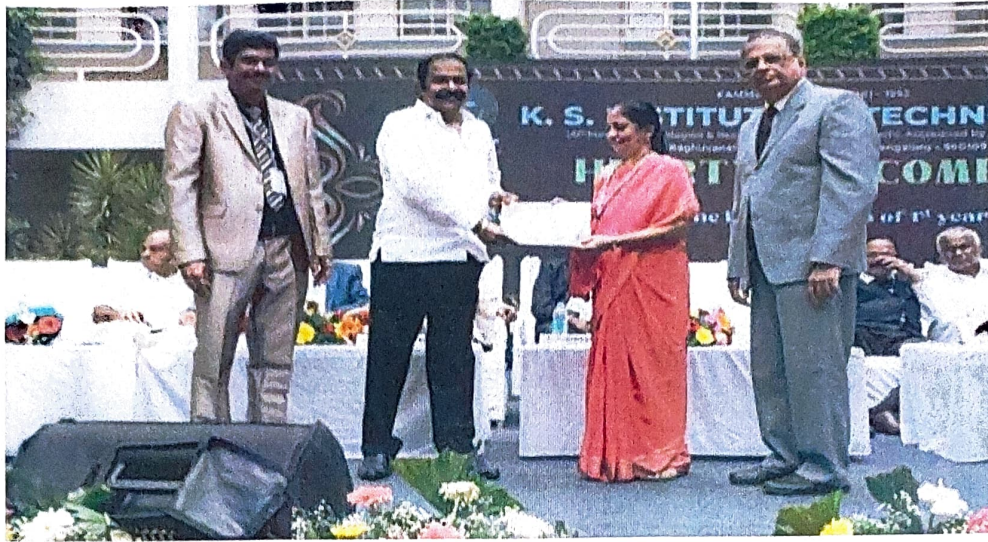
Dr. P. JALAJA serving as ASSOCIATE PROF & HEAD in the  
Dept. of AS & H has completed 10 years of continuous service in this institution  
as on 22/07/2023. The Management of KSIT in recognition of your dedicated services and as  
an acknowledgment of your valuable contribution to the institute is happy to confer with this honor  
of felicitation during the Inauguration of 1<sup>st</sup> year BE classes for the academic year 2023 - 24 on  
9<sup>th</sup> September 2023.

DR. DILIP KUMAR K.  
PRINCIPAL

SRI R. LEEA SHANKAR RAO  
SECRETARY

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Acknowledges the faculty for their contributions

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- KSGI-Student
- Novelty in the proposed research area

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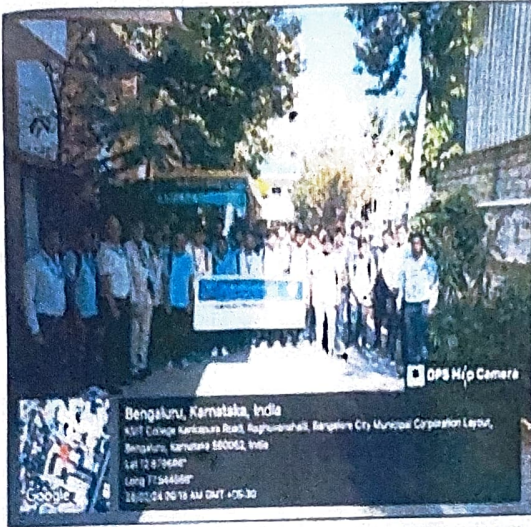
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**UG Research Programme**

*Ramesh*

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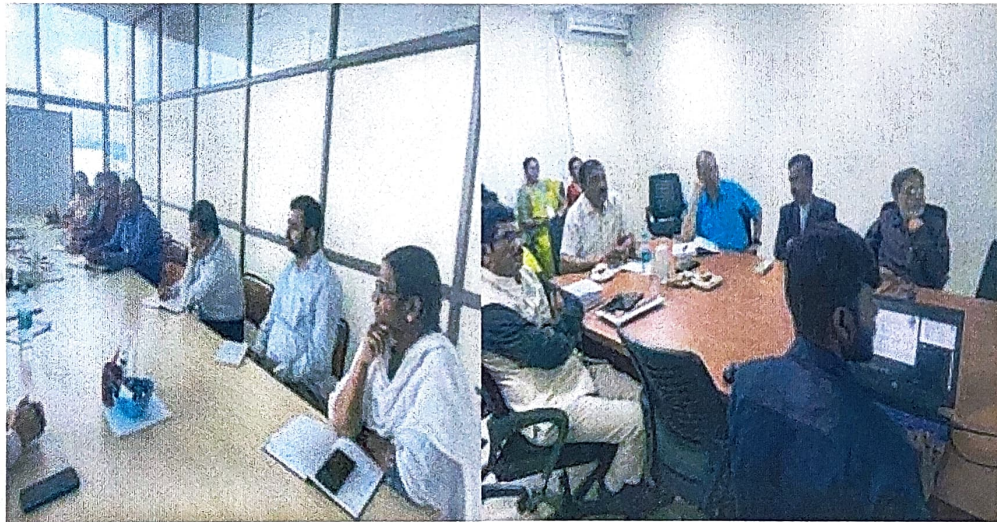
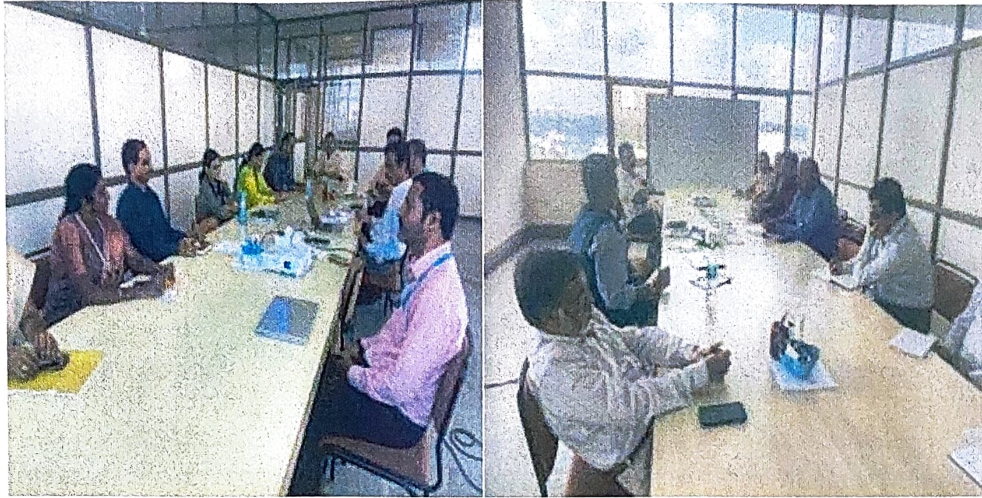


Industry Visit to Toyota Kirloskar Auto Parts Pvt. Ltd At Toyota Kirloskar Auto Parts Pvt. Ltd.



Industrial Visit to Toyota Kirloskar Auto Parts Pvt.ltd on 28/2/2024 in association with KSRIF

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**Faculty Development Program - Proposal Writing**

*Shanmugam*

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BENGALURU - 560 109.



kiran kumar <kirankumarbrp1@gmail.com>

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## ATAL - Application Submitted

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no-reply <aicte.admin@aicte-india.org>  
To: kirankumarbrp1@gmail.com

Fri, May 24, 2024 at 1:36 PM

### AICTE Training And Learning (ATAL) Academy

Hi Dr Kiran Kumar S R,

Your application with Application Number: 1715230512 has been submitted successfully!

Kindly verify your details.

Thanks,  
Team ATAL

  
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