



## **BIODATA**

**Name** : SANAL KUMAR S

**Designation** : ASSISTANT PROFESSOR

**Department** : INSTRUMENTATION

**Address** : 4B, SA HOMES, SOPANAM, PERINKULAM, ALATHUR, PALAKKAD.

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**Academic Qualification** : MTech (Control & Instrumentation) , MSc (Applied Psychology) , DIIM (Diploma in IT Infrastructure Management).

### **Experience:**

- Teaching : 14 years
- Industry: 8 years. (SAP Development Consultant, Dotnet developer, Network administrator, Technical support engineer)
- Research: Pursuing.

**Area of Interest/ specialisation** : Machine Learning, Deep Reinforcement Learning, Adaptive Control, Sliding Mode Control, Non Linear control in Robotics.

**Area of Research:** Deep Reinforcement Learning, Adaptive Control, Sliding Mode Control.

**Major/Minor Research Projects** : Nil

### **Responsibilities Undertaken(Official) :**

National Service Scheme Programme Officer, Unit No: 38, University of Calicut.

IQAC Member.

CDC Coordinator.

Anti-Ragging Committee Coordinator.

Digital Wing coordinator.

Placement Cell Coordinator.

Arts Club Advisor, College Magazine Staff Editor.

### Seminars Organised/ Invited Lectures :

1. Coordinator – UGC Sponsored Two Day National Seminar “**EMERGING TRENDS IN INSTRUMENTATION & CONTROL**” ETIC - 2014 vide sanction order No. SEM-0863/13-14/KLCA011/UGC-SWRO (PHYSICS) dated 28-3-2014, Organized by Department of Instrumentation, NSS College Nemmara, Palakkad in Collaboration with Institution of Engineers (India) , Palakkad local Centre on 4<sup>th</sup> and 5<sup>th</sup> of December 2014.
2. Resource person in the National Workshop on “General Informatics”, organised by PG Dept of Commerce and Management Studies, NSS College, Nemmara in Sponsored by Kerala State Higher Education Council, on 14<sup>th</sup>, 15<sup>th</sup>, 16<sup>th</sup> September 2011.
3. Resource person in the National Virtual Seminar & Workshop series “FLORINA” organized by the research and PG Dept of Botany, NSS College, Pandalam, Kerala in association with IQAC on 10/10/2020.

### Publications in Journals (Numbers) (Title with page No, Journal, ISSN/ISBN No whether peer reviewed no. of co-authors).

1. S. Sanal Kumar<sup>5</sup> . “Natural Fiber Incorporated Polymer Matrix Composites for Electronic Circuit Board Applications”, Advances in Materials Science and Engineering , Hindawi, Volume 2022, Article ID 3035169. ISSN: 1687-8434 (Print), ISSN: 1687-8442 (Online), DOI: 10.1155/5928, Impact Factor **1.726**. January 2022.
2. S. Sanal Kumar<sup>2</sup> , “A Novel Optimization Algorithm for Modifying the Parameter Unit of Solar PV Cell” , International Journal of Photoenergy, Hindawi, Volume 2022, Article ID 5240115. ISSN: 1110662X (Print), 1687529X (Online), Impact Factor **2.113**. April 2022.
3. S. Sanal Kumar<sup>6</sup> , “Optimization of Solar Panel Deployment Using Machine Learning” , International Journal of Photoenergy, Hindawi, Volume 2022, Article ID 5 7249109. ISSN: 1110662X (Print), 1687529X (Online), Impact Factor **2.113**. May 2022.
4. Sanal Kumar S<sup>1</sup> , Dr Palanivel S<sup>2</sup>, “The Defense Strategies, Benefits and Challenges of Pen Test against Cyber Attacks – A Review” , IJSER ( International Journal of Scientific & Engineering Research (**ISSN 2229-5518**), Volume 11, , (Pages:36 – 41) July 2020.
5. S. Sanal Kumar<sup>1</sup>, M Sreekala<sup>2</sup>, “The Effects of Integrated Adaptive Artificial Intelligence eLearning system for Enhanced & Flexible Teaching & Learning Process – A Review” , IJSER ( International Journal of Scientific & Engineering Research (**ISSN 2229-5518**), Volume 12, Issue 6, (Pages:248 – 254) June 2021.

### **Paper Presentations (Number) :**

National : 7

International: 2

### **Seminars Attended :**

International(No): 1

National : 4

State level : 0

**Books Published** (Title with page No, book title, editor and publisher ISSN/ISBN no. whether peer reviewed no. of co-authors).

1. Shereena J and Sanal Kumar S. (2012). General and Bioinformatics: Core Course Botany. Manjusha Publications, Calicut. Second Edition.
2. Shereena J and Sanal Kumar S. (2012). General Informatics and Bioinformatics: Core Course Zoology. Manjusha Publications, Calicut. Second Edition.
3. Shereena J and Sanal Kumar S. (2012). General Informatics, Core Course English. Manjusha Publications, Calicut. Second Edition.
4. K.K. Bhaskaran, A.R Ajith Kumar Ramesh, Shereena.J , Sanal Kumar.S. (2013). General Informatics Methodologies in Plant Science. Core Course Botany. Second Semester BSc Degree Programme , M.G University. Manjusha Publications, Calicut. First Edition.
5. Shereena J and Sanal Kumar S. (2010). General and Bioinformatics: Core Course Botany. Manjusha Publications, Calicut. First Edition.
6. Shereena J and Sanal Kumar S. (2010). General Informatics and Bioinformatics: Core Course Zoology. Manjusha, Calicut. First Edition.
7. Shereena J and Sanal Kumar S. (2011). General Informatics – for Third semester (Core 'Course) B.Com/BBA/HM Degree Programme. National Publishing House , Calicut. First Edition.
8. Shereena J and Sanal Kumar S. Computer Applications in Economics – for Fifth semester B.A (Economics) (Core Course) Degree Programme. National Publishing House , Calicut. (2011). First Edition.
9. Sanal Kumar S ( Editor ) , Proceedings of UGC Sponsored Two Day National Seminar ETIC – 2014 ( **ISBN 978-81-89085-92-6** ) , Emerging Trends in Instrumentation & Control, Organised by Dept of Instrumentation, NSS College, Nemmara in Collaboration with Institution of Engineers (India). (December 2014).
10. Sanal Kumar S. (June 2020). "Informatics Made Simple – A Student's Reference", Book Media Kottayam, Kerala, India. (**ISBN: 978-81-945634-2-6**).
11. Sanal Kumar S<sup>1</sup>. Dr Palanivel S<sup>2</sup>. (December 2021). "A TEXTBOOK ON MEASUREMENT & INSTRUMENTATION", Notion Press, 1<sup>st</sup> Edition. (**ISBN: 979-8885309370**).

### Articles Published in Patent office Journal:

1. SANAL KUMAR S<sup>3</sup>. "Examining the Issue of Gateway Selection for the Effective Integration of WSN with the Internet in Realizing the IOT Vision". Patent Application No.202141048087 A, Date: 22/10/21. Publication Date: 29/10/2021. The Patent Office Journal No. 44/2021 dated 29/10/2021. Page No: 50286.
2. SANAL KUMAR S<sup>3</sup>. "An Innovative Method for Introducing Multiple Data Relationships into the SVM Optimization Process". Patent Application No.202141046043 A, date: 8/10/21. Publication Date: 05/11/2021. The Patent Office Journal No. 45/2021 dated 05/11/2021. Page No: 52305.
3. SANAL KUMAR S<sup>2</sup>. "Multisensory Architecture in fog computing for IoT Devices with a focus on Precision Agriculture". Patent Application No. 202241004614 A, date: 27/01/22. Publication Date: 04/02/2022. The Patent Office Journal No. 05/2022 dated 04/02/2022. Page No: 6415.
4. SANAL KUMAR S<sup>5</sup>, "Security System for IoT Based on FPGA managed smart card cluster" . Patent Application No. 202241006309 A, date: 06/02/2022. Publication Date: 11/02/2022. The Patent Office Journal No. 06/2022 dated 11/02/2022. Page No: 8005.

### Copyright:

1. SANAL KUMAR S<sup>2</sup> , Registration No: L-112969/2022. Title of work: A PRECISION SYSTEM AGRICULTURE USING AI AND IOT FOR ILLITERATE FARMERS. Diary Number: 22673/2021-CO/L. Dated: 14/03/2022.

### Membership in Professional Bodies:

1. Life Member of **Instrument Society of India** , Indian Institute of Science, Bangalore, India - Membership No: LM - 2471.
2. Life Member of **Biomedical Engineering Society of India** , Manipal Institute of Technology, Manipal , India . Membership No: LM - 1237
3. Life Member of **The Robotics Society of India** , Department of Engineering Design , IIT Madras, Chennai – 600036, India . Membership No: R180776

### Honours and Awards: Nil