

PRASANTH ASOKAN

Phone: (+91) 8870261573,+420734332411
asokan@fzu.cz

Division of Optics
FZU-Prague, Czech Republic.

Actively involved to enhance my research activities towards the development of products and patents in the area of Optical sensors in Biomedical, Environmental and Health care Applications.

EDUCATION

- Post-Doc.** FZU Czech Academy of Life Sciences, Division of Optics (Pursuing) 2022
Project: “Versilib”
Advisor: Dr. Jakub Dostalek.
- PhD** Vellore Institute of Technology, School of Electronics Engineering May 2023
Thesis: “Development of fiber optic based VOC sensor for Biomedical Applications”
Advisor: Dr. Zachariah C Alex.
- M.Tech** Vellore Institute of Technology, School of Electronics Engineering May 2016
Title: “Sensor system Technology”
Thesis: Development of IOT based sensors using Alljoyn framework.
- BE** Anna University, Jeppiaar Engineering College May 2014
Title: “Electronics and Instrumentation Engineering”
Thesis: Development of Sensor system for theft intimation alert.

HONORS AND AWARDS

- Best Presentation on Award** 2022
IEEE International conference on “Signal Processing, Informatics, Communication and Energy systems 2022

RESEARCH EXPERIENCE

Experience in development of fiber optic based sensors for Biomedical and Environmental Applications. Also, I have a prior knowledge in writing the research proposals for grants. Here, I have listed the key experiences below.

Vellore Institute of Technology, Vellore. 2017-2022
Advisor: Dr. Zachariah C Alex

- Design and Development of Optical fiber sensor for the detection of Volatile Organic Compounds, Temperature, Pressure and Bio-Analytes like dopamine, Heavy Metal Ions.

- Fabrication of optical fiber sensors based on Surface Plasmon Resonance, Localized surface Plasmon Resonance, Lossy Mode Resonance, Evanescent Mode, and Fiber Bragg Grating.
- Development of Metal Oxide Semiconductors thin film over the optical fiber using RF & DC sputtering Technique and Thermal Evaporation Method.
- Characterization of Metal Oxides using FESEM, XRD, UV-Vis Spectroscopy, and Ellipsometer.
- Testing the optical sensors towards different Bio-Analytes VOCs, Heavy Metal Ions, and Toxic Gasses.
- Spectral Analysis using Optical Spectrum Analyser (Anritsu), Thorlabs detector (Vis-IR Ranges).
- Analysis of Refractive index of Analyte samples using Refractometer and Study on Optical constants using Ellipsometer via Different Models (Drude, Lorentz, etc.)

PUBLICATIONS

Books

Mohan Velumani, Ivneet Banga, Anirban Paul, Asokan Prasanth, Samir Ranjan Meher, Elizabeth Rufus, Sriram Muthukumar, Shalini Prasad, and Zachariah C Alex, Metal Oxide Semiconductors for Non-invasive, Diagnosis of Breast cancer, Wiley Publisher.

Journal Publications

- M. Velumani, A. Prasanth, S. Narasimman, C. Arunkumar, S. R. Meher, R. Sivacoumar, E. Rufus, A. Sampson and Z. C. Alex, Nanomaterial based sensors for Exhaled breath Analysis: A Review, coatings 2022, **(I.F.-3.236)**.
- A. Prasanth, S. Getachew, T. Shewa, M. Velumani, S.R.Meher, Z.C.Alex, A Bilayer SnO₂/MoS₂-coated Evanescent Wave Fiber Optic Sensor for Acetone Detection- An Experimental Study, Biosensors 2022, 12(9), 734. **(I.F – 5.743)**.
- A. Prasanth, S.R. Meher, Z.C. Alex, Metal oxide thin films coated evanescent wave-based fiber optic VOC sensor, Sensors & Actuators: A. Physical 338 (2022) 113459. **(I.F – 4.291)**.
- A. Prasanth, S.R. Meher, Z.C. Alex, Experimental analysis of SnO₂ coated LMR based fiber optic sensor for ethanol detection, Optical Fiber Technology 65 (2021) 102618. **(I.F – 2.80)**.
- Prasanth, A., Harini, V. K., Manivannan, P., Velumani, M., Narasimman, S., Meher, S. R. and Alex, Z. C. (2023), 'Detection of biofuel adulterants using an optical fiber based refractive index sensor', Optik 291, 171345.

Conference Papers

(Peer-Reviewed)

- A. Prasanth, Z.C. Alex, SnO₂ Thin Film Coated Fiber Optic VC Sensor based on Intensity Modulation Technique, IEEE SPICES.
- A. Prasanth, Z.C. Alex, Lossy Mode Resonance Based Optical Fiber Sensor Using Polyvinylpyrrolidone/Chitosan Composite for Identification of Cadmium Ions in Water, IEEE APSCON.
- Asokan Prasanth, Varadharajan Kanchana Harini, Mohan Velumani, Subramaniyam Narasimman, and Zachariah C. Alex*, Lossy Mode Resonance Based Fiber Optic Sensor for the Detection of Acetone Concentration, ICNMPA.

PATENTS

A.Prasanth, M. Velumani, S. Narasimman, S.R. Meher, Z.C. Alex “Low cost Non Invasive optical breath sensor for Health care Application,” (Under Review).

PRESENTATION

Paper Presentation, “SnO₂ Thin Film Coated Fiber Optic VC Sensor based on Intensity Modulation Technique,” IEEE SPICES, 12.03.2022.

WORKSHOPS ATTENDED

Recent Trends in Breath Analysis Techniques for Health Care Application (SPARC & UTD-Dallas)

Vellore Institute of Technology, Vellore, 21-22 January 2022.

Thin Film Deposition and Device Fabrication (DST-FIST & SERB)

Vellore Institute of Technology, Vellore, 7-9 January 2022.

Recent Trends in Medical Diagnosis Techniques using Breath Analysis (SPARC & UTD-Dallas)

Vellore Institute of Technology, Vellore, 8-9 January 2020.

PROFESSIONAL AFFILIATIONS

Research Associate, 2017-2018

Assist the laboratory experiments (Physical Sensor and Data Acquisition Lab).

Junior Assistant Professor, 2018-2020.

Assist the B.Tech and M.Tech courses (MEMS and Chemical Sensors).

Prasanth Asokan – Post Doc, FZU, Prague.

LANGUAGES

Tamil: Native Language

English: Listening, Speaking, Reading, and Writing

German: Intermediate Listener, Reading and Writing

SOFTWARE SKILLS

Core Technical: MATLAB, LabVIEW, Comsol Multiphysics, Multisim, Keil Microcontroller.

Programming: Basics of C, C++, and Python.

OTHER

Interests in Photoshop and Video Editing.

REFERENCE

Dr. Jakub Dostalek,
Senior Scientist
Division of Optics,
FZU Prague, Czech Republic
Email: dostalek@fzu.cz

Dr. Zachariah C Alex, Professor (HAG)
Department of sensor and Biomedical Technology
Vellore Institute of University
Email: zachariahcalex@vit.ac.in
Phone: +91-9384197826.

Dr. Samir Ranjan Meher, Assistant Professor (Sr-Grade 1)
School of Advanced Sciences
Vellore Institute of University
Email: samirmeher@vit.ac.in
Phone: + 91-9940150337.