

# KECH VIDYASAGAR

Assistant Professor

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As a Biomedical Engineer with a Ph.D. and experience in Medical Devices, I am a highly organized and dependable candidate with a proven track record of managing multiple priorities with a positive attitude. I am willing to take on added responsibilities to meet team goals and am known for my energetic and critical-thinking approach to problem-solving. I am self-motivated and astute, always striving for excellence in my work. I am confident that my expertise and passion for Medical Devices will be invaluable to any team.

## Work History

2014-02 - Current	<b>Assistant Professor</b> <i>Osmania University</i>
2022-08 - Current	<b>Guest Faculty</b> <i>NIPER</i>
2013-02 - 2014-01	<b>Research Associate</b> <i>University of malaya</i>
2011-05 - 2013-01	<b>Assistant Professor</b> <i>Dr. Bhausahed Nandkar College of Engineering &amp; Technology</i>
2010-07 - 2011-05	<b>Postgraduate Research Associate</b> <i>VIT University</i>

## Education

2017-07 - 2022-12	<b>PhD</b> <i>Centre For Biomedical Engineering, IIT Delhi</i>  Dissertation: Laser Surface Texturing of Freedom Surfaces of Articulating Components for Enhanced Tribo-Corrosion Properties
2009-06 - 2011-05	<b>M Tech: Biomedical Engineering</b> <i>VIT University - Vellore</i>  Dissertation: Design and Development of Wireless Intravenous Multidrug Delivery System
2005-07 - 2009-05	<b>B Tech: Biomedical Engineering</b> <i>Jawaharlal Nehru Technological University Hyderabad</i>  Dissertation: Design and Development of Head Controlled Wheel Chair

## Awards and achievements

- Youngest and the first recipient of the "Vice-chancellor award for research excellence".
- Selected for the Ph.D. program under QIP in the Centre for Biomedical Engineering, IIT-Delhi.
- Invited to TUM (Technical University Munich) for technical discussion as a part of the Indo-German collaborative project.
- Received a travel grant of Rs 150000 to attend the conference under the research promotion scheme.
- Youngest faculty to have been granted patents in the college of engineering, Osmania University.

## Interests

- Laser surface modification
- Tribo-corrosion study of medical implants
- Robotics in machining
- Micro texturing of materials/components
- Medical Devices

## Skills

### Equipment

- Laser machines (Nano second, Continuous)
- Potentiostat polarization equipment
- Tribometer
- Profilometer
- UTM
- Injection molding
- Extruder
- SEM
- Bearing Tester

### Programming languages

- Embedded C
- MATLAB
- Python

### Softwares

- SOLIDWORKS
- MIMICS
- LabVIEW

## Funded Projects

- Design and Developmet Of Automatic Epilepsy Detection System by UGC (Rs. 380000.00)
- Design and Development Of Multi-physiological Signal Based Home Automation System by UGC(Rs. 260000.00)
- Design and Development of smart prosthetics by DST-PURSE (Rs. 400000)

## Patents

- **K. E. Ch. Vidyasagar**, Sudesh sivarasu, “Mobile Controlled Drug Delivery System”, Application No. 3150/CHE/2010; International Classification: G06F3/048; G06F 9/22; A61M 5/14; **Grant No. 288750**
- **K. E. Ch. Vidyasagar**, Sudesh sivarasu “Mobile Controlled Multi Drug Infusion System”, Application No. 3996/CHE/2010 A; International Classification: A61M5/00. ; **Grant No. 304847**

## Journal Publications

- **K. E. Ch. Vidyasagar**, Aggarwal V, Sinha SS, Saha SK, Kalyanasundaram D. “Laser-based micro texturing of freeform surfaces of implants using a Stewart platform”. Precision Engineering, 2021;72:294–303. **(IF: 3.315)**
- **K. E. Ch. Vidyasagar**, Pandey RK, Kalyanasundaram D. An exploration of frictional and vibrational behaviors of textured deep groove ball bearing in the vicinity of requisite minimum load. Friction 2021. **(IF:6.168)**
- **K. E. Ch. Vidyasagar**, Pandey RK, Kalyanasundaram D. “Improvement of deep groove ball bearing’s performance using a bionic textured inner race” Journal of Bionic Engineering, 2021:18:974-990 **(IF: 2.995)**
- **K. E. Ch. Vidyasagar**, Rana A, Kalyanasundaram D. “Optimization of laser parameters for improved corrosion resistance of nitinol”, Materials and Manufacturing Processes, 2020; 35:1661–1669. **(IF: 4.783)**
- Gupta N, N Tandon, RK Pandey, **K. E. Ch. Vidyasagar**, Kalyanasundaram D. “Tribological and Vibration Studies of Textured Spur Gear Pairs Under Fully Flooded and Starved Lubricating Conditions.” Tribology Transactions, 2020; 63: 1103-1120. **(IF: 2.056)**
- Gupta N, N Tandon, RK Pandey, **K. E. Ch. Vidyasagar**, Kalyanasundaram D. “Exploratory tribodynamic research on textured gearsets lubricated with Molybdenum disulfide blended grease”. Tribology International 2022; 165: 1-18. **(IF: 5.62)**
- Sikidar A, **K. E. Ch. Vidyasagar**, Gupta M, Garg B, Kalyanasundaram D. “Classification of mild and severe adolescent idiopathic scoliosis (AIS) from healthy subjects via a supervised learning model based on electromyogram and ground reaction force data during gait”. Biocybernetics and Biomedical Engineering, 2022; 42: 870-887. **(IF: 5.687)**
- Verma M, Rana A, **K. E. Ch. Vidyasagar**, Kalyanasundaram D, Saha S. “Protein Patterning on Microtextured Polymeric Nanobrush Templates Obtained by Nanosecond Fiber Laser” Macromolecular Bioscience, 2022; 22: 1-15. **(IF: 5.859)**

## International conferences

- N Gupta, N Tandon, RK Pandey, **K. E. Ch. Vidyasagar**, D Kalyanasundaram, "Performance studies of fully flooded and starved lubricated textured spur gearsets", 46th Leeds Lyon symposium on tribology, Lyon, France 2019
- N Gupta, N Tandon, RK Pandey, **K. E. Ch. Vidyasagar**, D Kalyanasundaram, "Performance Studies of Spur Gearsets with Textured Face and Flank using Fresh and MoS<sub>2</sub> blended greases", IndiaTrib-2019 (10th International Conference on Industrial Tribology), IISc Bangalore 2019.
- **K. E. Ch. Vidyasagar**, Moghavvemil M, Prabhat T S S T, "Performance Evaluation of Contemporary Classifiers for Automatic Detection of Epileptic EEG", International Conference on Industrial Instrumentation and Control (ICIC) College of Engineering Pune, India. 2015
- **K. E. Ch. Vidyasagar**, Ravi Varma N, "Desing and Development of Caged ball heart valve using Solidworks", International Conference on Biology And Biomedicine 2013
- **K. E. Ch. Vidyasagar**, Ravi Varma N, "Impact on the eye during air bag Crash using finite element analysis", International Conference on Biology And Biomedicine 2013
- **K. E. Ch. Vidyasagar** 3-6 December 2008," An Autocorrection Algorithm for Detection of Misaligned Fingerprints", IFMBE Proceedings, 1, Volume 23, 13th International Conference on Biomedical Engineering, Track 1, Pages 415-417
- **K. E. Ch. Vidyasagar**, Jyoti Gupta, T Phani Vasudev, "SMS (short message service) Infusion Pump for Controlled Multi Drug Delivery", International Conference Systemics, Cybernetics and Informatics, ICSCI 2011, Jan 5-8, 2011
- **K. E. Ch. Vidyasagar**, 'Intellectual pattern recognition technique to assess muscle activity, 13th International Conference on Systemic, Cybernetics and Informatics, Hyderabad,7th-10th Jan 2009
- **K. E. Ch. Vidyasagar**, Jyoti Gupta, T Phani Vasudev, "Wireless Control of Infusion Pump for Multidrug Delivery" International Conference on Biomedical Engineering and Assistive Technologies, NIT J, Dec 17-19,2010
- **K. E. Ch. Vidyasagar**, Jyoti Gupta, T Phani Vasudev, "3D Design of Heart with Caged Ball Valve & Its Hemodynamic analysis', International Conference Systemics, Cybernetics and Informatics, ICSCI 2011, Jan 5-8, 2011.
- **K. E. Ch. Vidyasagar**, "Design And Development Of Head Controlled Wheelchair For Hemiplegic Patients", VIT Conference on Science Engineering and Technology, VIT-SET 2011, April 20-21, 2011.
- **K. E. Ch. Vidyasagar**, Sudesh Sivarasu, "Design and Development of Wireless Intravenous Drug Delivery System", International Joint Journal Conference in Engineering And Technology, IJJCET -2011

## Professional Memberships

- Expert committee member of the department of Intermediate Education, Telangana.
- Life Member of “ Biomedical Society of India (BMESI)” – LM-1021
- Life Member of “Indian Society for Technical Education(ISTE)” – LM-82982
- ASSOCIATE of “The Institution Of Engineers India(IEI)” – A-556145-1
- Member of “Biomedical engineering society (BMES)” –39231
- Life Member of “International Association Of Engineers (IAENG)” – 121530
- Life Member of “Asia-Pacific Chemical, Biological& Environmental Engineering Society (APCBEES) ” – 200666
- Life Member of “International Association Of Computer Science And Engineering (IACSIT)” – 80344561
- Editorial Member of International Journal of Engineering Practical Research (IJEPR)
- Reviewer of International Journal of Emerging Technology and Advanced Engineering
- Reviewer of world scientific and engineering academy and society

## References

**Prof. Sudesh Sivarasu**, Professor in Biomedical Engineering at University of Cape Town & Director - Biomedical Engineering Research Centre (UCT - BMERC), Rondebosch, South Africa.

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**Dr. Dinesh Kalyanasundaram**, Associate Professor in Centre for Biomedical Engineering, IITDelhi, Newdelhi, India.

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**Dr. Dabbu Suman**, Associate Professor and Head, Department of Biomedical Engineering, University College of Engineering, Osmania University, Hyderabad, India.

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