



DST-AMRITA
TECHNOLOGY
ENABLING
CENTRE



DST- AMRITA TEC @ AMRITA

NEWSLETTER

July - December 2021

NEWS

GENWORKS MOU SIGNING

TEC@Amrita and Genworks Pvt Ltd has signed an MoU on 30th April, 2021. Dr.Krishnashree Achuthan from Amrita University and Mr. R. R. Balaji from Genworks signed on the MoU. Both Genworks and Amrita mutually agreed to build an ecosystem of IoT enabled health care system. Employees from Genworks and representatives from Amrita University attended the virtually conducted MoU signing event.



Meeting on 14th May, 2021

Meeting of DST-Amrita TEC was conducted on 14th May, 2021. Dr. Anita Agarwal and Dr. Krishna Kant represented DST, Govt of India in this review meeting. Dr. Krishnashree Achuthan and Mr. Joydeep Nag were presented TEC's immense progress for the past 1 year.

Vaccination campaign in association with FICCI in June

DST-Amrita TEC in association with FICCI conducted a vaccination campaign for all employees of Amrita in June, 2021.

AMRITA TEC SHOWCASES PRODUCTS AT EXHIBITIONS AND VENUES

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AMRITA TEC SUPPORTS PLYWOOD MSME CLUSTER

Plywood is made of three or more thin layers of wood bonded together with an adhesive. Each layer of wood, or ply, is usually oriented with its grain running at right angles to the adjacent layer in order to reduce the shrinkage and improve the strength of the finished piece. Most plywood is pressed into large, flat sheets used in building construction. Other plywood pieces may be formed into simple or compound curves for use in furniture, boats, and aircraft. The India plywood market reached a value of INR 195.8 Billion in FY 2021-22. Looking forward, the industry is expected to reach INR 297.2 Billion by 2027-28, exhibiting a CAGR of 7.4% during 2022-23 to 2027-28.

Plywood industry is one of the most promising and developing industry in Kerala. The industry makes an enormous contribution to the economy of the state.

According to Sawmill owner and Plywood Manufacturers Association (SOPMA), Kerala has 600plywood manufacturers and around 450 of them are based out in Perumbavoor and nearby villages. Most of the units started out as Sawmill and moved into the Plywood 20years ago.

Currently the industry is dominated by unorganised segment; however there is a shift for Unorganised segment to Semi Organised and Organised segment. Hence there is a need for affordable technology for these companies to upgrade to the need of the market to produce a higher quality with lesser production cost. Amrita TEC has promised to help with standardization, automation, control and monitoring of the hot pressing stage plays a critical role in the bringing out a quality product.



AMRITA TEC SUPPORTS AGRICULTURE IMPLEMENTS CONSORTIUM



Agri tools manufactured at Shornur Agri Implements Consortium requiring standardization and marketing support

KNOWLEDGE EXCHANGE WEBINAR SERIES

Family Business in MSMEs : Dynamics and Insights

N. Krishnan, Family Business Advisor and Founding Partner, Sadasiva Consultancy

Intellectual Property Rights : Overview and Management

Dr. Dipanjan Nag, Prof of Practice Business and Science, Rutgers University, Visiting Professor, Shizuoka University, Chief Partnership Officer, Ventech Solutions



“Innovation”

Mr. S. Devarajan, Director – TATA Sky Ltd, Chairman – ADC Communications Ltd, Former MD & CEO – Tata Elxsi and Mr. Naresh Kumar, CTO, Tektronix, EMEA-India on 28th August, 2021

“Digital Manufacturing” by on 26th September, 2021

“Lean Manufacturing” on 23rd October, 2021

Amrita TEC signed a Non-Disclosure Agreement with BPL for exchange of knowledge, information and Co-Creating and development of products and processes related to Medical Devices.

Solar Powered E Rickshaw: The solar-powered electric rickshaw is a scalable model and very suitable for Indian roads for last-mile connectivity. AC charging stations: A standard electric vehicle charging station for the developed auto with multi charging option i.e AC & DC charging option from a level 2 charger



Agreement Signing with BPL and Amrita TEC



EMG based prototype prosthetic hand is low cost for rural population. The product collects data from EMG signals in muscles and coordinates the movement of fingers to perform actions such as holding an object.

Search and Rescue Robot which can travel through any terrain and can identify victims and signs in disaster hit areas. Robot is remotely operated using Wi-Fi Technology and uses a 360 degree camera for environment analysis.



Walking robot to detect harmful gases for mining industry: A multipurpose walking robot which can be controlled remotely and can detect hazardous gases in mines and also to explore unexplored areas in deep down mines. It can also be used for carrying some payload from one place to another.



Sewage Management System through Gardens utilising Green Gifts Sewage bio-filters: Garden based waste water management system recycles black water for a household. The system utilises bio-filters based on algae and vertical garden structure which acts as a filtration bed. The recycled black water can be used for gardening, toilet flushes etc



Amrita Pulse is a “Remote ECG Monitoring Device” with these features: Bluetooth connectivity from wearable device to the patient smartphone Patient smartphone to cloud/HIS connectivity over any data network Cloud/HIS to Doctor’s Mobile/Tablet through internet or VPN Web and Mobile Apps to monitor live and stored ECG signals Automatic activity detection and tagging using in-built accelerometer Motion artifact removal based on the activity

AMRITA WEBINARS 2021

HOW DRAGONFLIES GLIDE EFFICIENTLY

By Department of Mechanical Engineering, Bangalore

23 April 2021, Saturday
09:00 PM - 04:30 PM IST

Speaker
Dr. Suresh Padmakumar,
Assistant Professor,
Department of Mechanical Engineering,
AMRITA School of Engineering, Bangalore

Topics of Discussion

- Insect Flight Dynamics
- Particle Image Velocimetry
- Flow Over Superhydrophobic Surfaces

Registration Link: <https://bit.ly/2f6H0q1>

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AMRITA WEBINARS 2021

ELECTRIC VEHICLE CHARGERS AND PROTOCOLS

By Department of Electrical and Electronics Engineering and IISc PES & IISc J IISc

21 April 2021, Saturday | 9:30 AM - 10:30 AM IST

Registration Link: <https://bit.ly/2nDwtvV>

Speaker
Dr. V. Thanigai,
Assistant Tech. Staff, EEE,
Department of Electrical and Electronics Engineering,
IISc PES & IISc J IISc

Topics of Discussion

- Classification of EV chargers
- Protocols for EV chargers
- Challenges of EV charge

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AMRITA WEBINARS 2021

BLOCKCHAIN FUNDAMENTALS - USE CASES AND APPLICATION

By Computer Science and Engineering, Amrita School of Engineering, Bangalore Campus

18 May 2021, Saturday | 09:00 pm to 04:00 pm IST

Registration Link: <https://bit.ly/2f6H0q1>

Topics of Discussion

- Blockchain Fundamentals
- Application of Blockchain in the industrial sector
- Medium for Secure Storage
- Implementation Challenges & Solutions

Speaker
Dr. Rajakumar Arul,
Assistant Professor,
Department of Computer Science and Engineering,
Amrita School of Engineering, Bangalore Campus

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AMRITA WEBINARS 2021

INDUSTRIAL INTELLIGENT SYSTEMS

By Department of IIT, Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Bangalore

17 June 2021, Saturday | 03:00 pm to 04:30 pm IST

Registration Link: <https://bit.ly/2f6H0q1>

Topics of Discussion

- Features of Industrial Systems
- Industrial Robots
- AI in Industry
- Optimization & Modeling

Speaker
Dr. N. Krishna Prasad,
Assistant Professor,
Department of IIT,
Amrita School of Engineering,
Amrita Vishwa Vidyapeetham, Bangalore

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AMRITA WEBINARS 2021

RECENT TRENDS AND DEVELOPMENTS IN MICROGRID-INDIAN PERSPECTIVE

By Department of Electrical and Electronics Engineering, Bangalore and IISc PES & IISc J IISc

23 April 2021, Saturday
5:30 PM - 6:30 PM IST

Registration Link: <https://bit.ly/2f6H0q1>

Speaker
Dr. S. Suresh Babu,
Head, Training Department,
IISc PES,
Department of Electrical and Electronics Engineering,
IISc PES & IISc J IISc

Topics of Discussion

- Microgrid
- Renewable Energy
- Energy Storage
- Energy Management System

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AMRITA WEBINARS 2021

SCALING EFFECTS IN ANALOG AND MIXED SIGNAL CIRCUITS

By Department of ECE, Amrita School of Engineering, Bangalore

19 May 2021, Saturday
03:00 pm to 04:30 pm IST

Registration Link: <https://bit.ly/2f6H0q1>

Topics of Discussion

- SI: The impact of scaling on analog and mixed signal circuits
- Technology evolution and its challenges
- AI in the design of SI
- How to scale up the number of gates in a circuit
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Speaker
Dr. Parashraman A.,
Head, ECE, Amrita School of Engineering,
Amrita School of Engineering, Bangalore

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AMRITA WEBINARS 2021

FUTURE OF POWER ELECTRONICS AND DRIVES: OPPORTUNITIES AND CHALLENGES

By Department of IISc, Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Bangalore

18 June 2021, Saturday | 03:00 pm to 04:30 pm IST

Registration Link: <https://bit.ly/2f6H0q1>

Topics of Discussion

- Applications of Power Electronics
- Recent Trends in Power Electronics
- Opportunities and Challenges

Speaker
Dr. N. Krishna Prasad,
Assistant Professor,
Department of IISc,
Amrita School of Engineering,
Amrita Vishwa Vidyapeetham, Bangalore

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AMRITA WEBINARS 2021

INTELLIGENT DEMAND RESPONSE FOR RE INTEGRATION IN SMART GRID

By Department of IISc, Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Bangalore

18 June 2021, Saturday
02:30 pm to 04:00 pm IST

Registration Link: <https://bit.ly/2f6H0q1>

Topics of Discussion

- Smart Grid
- Intelligent Demand Response
- Smart Grid
- Intelligent Demand Response

Speaker
Dr. N. Krishna Prasad,
Assistant Professor,
Department of IISc,
Amrita School of Engineering,
Amrita Vishwa Vidyapeetham, Bangalore

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AMRITA WEBINARS 2021

WATER AND THERMAL MANAGEMENT IN A PROTON EXCHANGE MEMBRANE FUEL CELL- A CFD APPROACH

By Department of Mechanical Engineering, Amrita School of Engineering, Amritapuri

20 May 2021, Saturday
4:00 PM - 5:00 PM IST

Registration Link: <https://bit.ly/2f6H0q1>

Speaker
Dr. Vikas Rajan,
Assistant Professor,
Department of Mechanical Engineering,
Amrita School of Engineering, Amritapuri

Topics of Discussion

- Introduction to CFD
- Water and Thermal Management in PEMFC
- Manufacturing of PEMFC

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AMRITA WEBINARS 2021

WIND TECHNOLOGY - TRENDS, OPPORTUNITIES AND CONTROL

By Department of EEE, Amrita School of Engineering, Bangalore

05 June 2021, Saturday
02:45 PM - 04:45 PM IST

Registration Link: <https://bit.ly/2f6H0q1>

Speaker
Ms. Prashanti S. Manjunath,
Assistant Professor,
Department of Electrical and Electronics Engineering,
Amrita School of Engineering, Bangalore

Topics of Discussion

- Basic introduction to wind energy
- Market trends
- Wind resource assessment
- Technology trends and future scope

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AMRITA WEBINARS 2021

THERMAL & FLUIDS ENGINEERING AT AMRITA (AMRITAPURI CAMPUS)

By Department of Mechanical Engineering, Amrita School of Engineering, Amritapuri

20 June 2021, Saturday
4:00 PM - 5:00 PM IST

Registration Link: <https://bit.ly/2f6H0q1>

Speaker
Dr. Anil Kumar,
Assistant Professor,
Department of Mechanical Engineering,
Amrita School of Engineering, Amritapuri

Topics of Discussion

- Highlights of the program
- Faculty resources & research facilities
- Through a day of research & development efforts
- Introduction to new thrust areas & research topics

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AMRITA WEBINARS 2021

ENERGY STORAGE SYSTEMS IN RENEWABLE ENERGY SECTOR

By Department of Electrical and Electronics Engineering, Amrita School of Engineering, Bangalore

20 June 2021, Saturday
02:00 PM - 04:30 PM IST

Registration Link: <https://bit.ly/2f6H0q1>

Speaker
Dr. K. R. Venkatesh,
Assistant Professor,
Department of Electrical and Electronics Engineering,
Amrita School of Engineering, Bangalore

Topics of Discussion

- Challenges in the power grid due to RE integration
- Benefits in Energy Storage System
- Energy management using hybrid energy storage technologies

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