Organizing Committee

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Prof. Anil D. Sahasrabudhe, Chairman, AICTE

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Dr. Jayendra Kumar	Dr. Nagendra Kumar
Dr. Ajay Kumar	Dr. Basudeba Behera
Dr. Basanta Bhowmik	Dr. Kunal Singh
Dr. Swagatdeb Sahoo	Dr. Mrutyunjay Rout

Tentative Schedule

	10:00 AM to 11:30 AM		12.00 PM To 1.30 PM		2:30 PM To 4.00 PM	4:15 PM To 4:45 PM
14-12-2020	**Registration and Inauguration**		Session **1** **Introduction to Wearable Technology**		Session **2** **Wearable Devices and Telemedicine**	
15-12-2020	Session **3** **Science of Haptics, Applications & advancements**		Session **4** **Micro-controllers Programming & interfacing**	**Lunch Break**	Session **5** **Data Gathering & Processing**	
16-12-2020	Session **6** **Sensors, Motion, Body Vital / Health measurement**		Session **7** **Feedback & body Visual Display Technologies**		Session **8** **Role of Wearable Devices in Physical Fitness**	
17-12-2020	Session **9** **Battery & Power Technologies**	Tea	Session **10** **Wearable Device Precautions**	Test	Session **11** **Fashionable Technology**	
18-12-2020	Session **12** **Evolving Health Care Environment**		Session **13** **IoT and Telemedicine**	Feedback	Session **14** **Future of Telemedicine**	**Valediction**

Workshop on Wearable Devices (WWD-2020)

December 14-18, 2020

Organized by

Department of Electronics and Communication Engineering
National Institute of Technology, Jamshedpur
in collaboration with
AICTE Training And Learning (ATAL) Academy, Kolkata

Venue:

On your Desktop/Laptop/Tablet/Smart Phone with internet connectivity from anywhere

About NIT Jamshedpur

National Institute of Technology, Jamshedpur earlier known as Regional Institute of Technology (RIT) was established on 15th August 1960 as a joint venture of Government of India and the Government of Bihar in the chain of Regional Engineering Colleges in India with the aim to generate technical graduates of highest standards who could provide technological leadership to the region. On 27th December 2002, RIT was transformed to National Institute of Technology, Jamshedpur with the status of a Deemed University. The Institute has 12 departments including engineering, science and humanities. It has more than 200 faculty, 4000 students and 150 administrative and supporting staff. It has a self-contained campus located on the outskirts of Jamshedpur on 341.3 acres of sprawling, rolling hilly, wooded land. It combines natural beauty of countryside with urban glamour of a mineral-rich industrial area in the state of Jharkhand. It is surrounded by giant and medium scale industries and reputed Institutes. Being the cradle of technical excellence, the institute took no time in starting online teaching to combat the COVID-19 crisis.

About the Department

Department of Electronics and Communication Engineering was started in 1988. The department aims to be a national leader in imparting quality education, carrying out research and technology development. The department provides an outstanding research environment and offers academic program leading to B.Tech, M Tech and Ph.D. degrees

About ATAL Academy Kolkata

AICTE Training And Learning (ATAL) Academy was digitally announced with establishment of four Academies in the country at Jaipur, Vadodara, Guwahati and Trivendram by MHRD, Govt. of India on 24.9.2018. In September 2019, eleven new ATAL Academies have also been established at Dehradun, Kanpur, Bhopal, Bangalore, Chennai, Murthal, Srinagar, Patna, Kolkata, Hyderabad and Pune. Some of the objectives of ATAL being:

- To support technical institutions in fostering research innovation and entrepreneurship through training
- To stress upon empowering technical teachers & technicians using Information & Communication Technology
- To provide a variety of opportunities for training and exchange of experiences such as workshops, orientations, learning communities, peer mentoring and other faculty development programmes.

About the Short Term Programme (WWD-2020)

Smart-Watches, Fitness-Trackers, Smart-Glass for monitoring activities from sleep to walking are becoming part of daily life. Wireless medical devices ("wearables") applied on us, in us and around us present great opportunities for clinical research, early prediction of disease, care delivery, and healthcare management. These may be injected, implanted, or ingested and, when paired with complementary medical devices, may support remote patient monitoring, therapy delivery, or diagnostic purposes. Remote Health Monitoring is a novel concept in the field of life extending health care, where telemetry is being used. Telemedicine is the use of telecommunications technology to provide, enhance, or expedite healthcare services by accessing off-site databases, linking clinics or physicians' offices to central hospitals, or transmitting x-rays or other diagnostic images for examination at another site. Healthcare professionals can make use of these linked telemedicine medical devices in the evaluation, diagnosis, and treatment of patients in remote areas through satellite video-conferencing as well as for research. Specialists can advise, online, doctors or paramedics at the patient's end, and if necessary even guide them in surgery. Applications of wearable devices and telemedicine seem endless, the capabilities are miraculous and yet it is so poorly understood. This workshop will address the technical challenges with in-body wireless devices and different security vulnerabilities associated device sustainability in terms of power and in-body durability and provide technical insight on how to best evaluate the appropriate devices. The workshop is designed for students and professionals in the fields of science, medicine, design, and engineering. Anyone with an interest in wearable technology and basic knowledge of electronics is welcome to join. The idea of this workshop is to de-mystify wearable devices and telemedicine.

Due to COVID-19 crisis WWD-20 will be conducted online using Google Meet Application and the registered participants can interact online using their Desktop/Laptop/Tablet/Smart Phone with internet connectivity from anywhere.

Who can attend WWD-2020

Participation in this FDP is open to the faculty members of the AICTE approved institutions, research scholars, PG students, participants from Government and Industry (Bureaucrats and Technicians) and staff of host institutions.

Registration Fees

There is no Registration fee from any participant.

Number of seats: 200

Registration link: https://atalacademy.aicte-india.org/signup

Selection will be done on first-come first served basis.

Last Date for registration: 9-12-2020

Topics to be covered

- Introduction to Wearable Technology (Technology overview and applications)
- Introduction to Haptics (Science of Haptics, applications & technological advancements)
- Data gathering & processing (Micro-controllers & microprocessors, Programming & interfacing, data verification & visualization)
- Sensors (Motion, body vital / health measurement Environmental)
- Feedback & communicating to body (Visual display technologies, LED, LCD & E-Ink, physical vibration, audio speaker & buzzer)
- Battery & power technologies (Lithium ion, alkaline, NiMH)
- Designing wearable consumer device (Electronics precautions, shielding & water- proofing)
- History of telemedicine
- Telemedicine today
- The difference between telemedicine and Telehealth
- Top telemedicine medical specialties
- Types of telemedicine
- Who pays for telemedicine
- Future of telemedicine

Resource Persons

The course content will be delivered from a pool of resource persons on the subject from leading industries and prestigious academic institutions.

Pedagogy

PPT slides handout, online lecturing, and demonstration videos.

An online test will be conducted at the end of the program. Digital certificate from AICTE ATAL Academy will be issued to those who have attended the program without any absenteeism and scored minimum 60% marks in the test.

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Email for communication: wwdt20@gmail.com