

Account Name	GIAN NITW
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Candidates registering early will be given preference in short listing process. The number of participants is 50. For any queries regarding registration of the course, please contact the Coordinator:

**Dr. B.Sobha,**

Associate Professor, Dept. of Physics,  
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**About GIAN Course**

MHRD, Govt. of India has launched an innovative program titled “Global Initiative of Academic Networks (GIAN)” in higher Education, in order to garner the best international experience. As part of this, internationally renowned Academicians and Scientists are invited to augment the Country’s academic resources, accelerate the pace of quality reforms and elevate India’s scientific and technological capacity to global excellence.

**About the Institute and Warangal**

National Institute of Technology, Warangal (NITW) formerly known as RECW is the first among seventeen RECs set up in 1959. Over the years, the Institute has established itself as a premier Institution in imparting technical education of a very high standard, leading to B.Tech, M.Tech and Ph.D. programmes in various specializations of Science and Engineering streams. Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140 km from Hyderabad. Warangal is well connected by rail and road. National Institute of Technology, Warangal campus is 2 km away from Kazipet railway station and 12 km away from Warangal railway station.

**About the Department**

Department of Physics is involved in teaching UG and PG students of Engineering and Science programs. The department has highly qualified, motivated and experienced faculty actively engaged in research and having a number of sponsored R & D projects. The department offers a three year M.Sc. (Tech.) Engineering Physics program with specializations in Photonics, Electronics and Instrumentation. The areas of research include Sensors and related instrumentation, materials for solar energy ,Photonics , Nano-materials, Glasses and Glass ceramics, Biomaterials, Radiation Physics. The department has liaison with reputed industries and R&D organizations like BEL, CSIO, ELOIRA, ARCIetc.



**A Five Day**

**GIAN Course on**

**New Effects and Materials for  
Acoustoelectronic and Other  
Acoustic Sensors**

**November 6<sup>th</sup> to 11<sup>th</sup>, 2017**

**Call for Registration and  
Participation**

**Resource Person**

**Prof. Dr. Iren Kuznetsova  
Principal Research Scientist,  
Kotelnikov Institute of Radio  
Engineering and Electronics,  
Moscow-125009, RUSSIA**

**Coordinator**

**Dr. B. Sobha**

**Department of Physics  
National Institute of Technology  
Warangal – 506 004, Telangana  
India**

## Overview of the Course

Currently, one of the most rapidly developing areas of science and technology is the development and production of a variety of sensors. This is due to the need to monitor the state of the environment, maintenance of bio security, prevention of technogenic catastrophes and terrorist attacks, creating a comfortable environment, etc. Currently significant progress is observed in the development of electromechanical and electrooptical micro - and nanosensors . The widespread use of such systems finds application in microenergetic systems with energy harvesting feature , underwater imaging, chemical sensing etc. The course is devoted to the understanding of different types of acoustoelectronic , other types of acoustic sensors on different operating physical principles, the study of the materials used to create sensor devices and technologies of their manufacture and applications.

## Course Contents

The course will cover the fundamentals of acoustic wave process in materials, design principles of different types of acoustic sensors ranging from macro to nano . The participants will be exposed to the understanding of the problems of acoustic waves in multilayer structures interaction problems of acoustic waves in acousticelectronic sensors with external conditions of underwater media , temperature, electrical and magnetic fields. The application aspects viz . technological, ecological, medical of the sensors to the modern network systems will be covered. The participants will be made to learn the basic concepts related to these topics by way of carefully planned problem solving sessions under the guidance of the expert. Course participants will also be introduced to applications of these sensors to current areas such as microenergetic systems with energy harvesting feature , underwater imaging , chemical , environmental , medical with case study examples for the purpose of motivating them to research in these areas.



**Prof. Iren Kuznetsova** : is at present Principal Research Scientist at Kotelnikov Institute of Radio Engineering and Electronics, Moscow, Russia. Her research areas of interest are –acoustic wave propagation in

piezoelectric materials and structures, development of devices and sensors and new nano materials based on acoustic waves in piezoelectric structures, interactive effects of electric and magnetic fields with acoustic waves in piezoelectrics .

She also has research interests on the influence of millimeter range electromagnetic radiation of low intensity on biological objects. Dr Iren Kuznetsova has 95 research publications in reputed international journals in addition two invited book chapters to her credit.

**Dr. B.Sobha** is currently Associate Professor, Department of Physics at National Institute of Technology, Warangal, India She has published a number of research papers in peer reviewed international and national journals. Her research interests are in the area of sensors, transducers and related instrumentation, material aspects of sensors and transducers.

## Who can Participate?

This program is open to the Faculty, PG and Research students of Physics, Chemistry, Mathematics and other relevant Engineering branches from various Institutes. Practicing engineers from industries and research scientists from research labs can also participate.

## How to Register?

**Stage-1: Web Portal Registration:** Visit

<http://www.gian.iitkgp.ac.in/GREGN/index> and

create login User ID and Password. Fill up the blank registration form and do web registration by paying Rs. 500/- online through Net Banking/Debit/Credit card. This provides the user with life time registration to enroll in any number of GIAN courses offered.

**Stage-2: Course Registration:**

Login to the GIAN portal with the user ID and Password already created in Step 1. Click on Course Registration option at the top of Registration form. Select the Course titled “**New Effects and Materials for Acoustoelectronic and Other Acoustic Sensors**” from the list and click on Save option. Confirm your registration by clicking on Confirm Course.

## Registration Fee

Faculty	Rs. 2,000/-
Participants from Industry /Research Organizations	Rs. 4,000/-
Students & Research Scholars	
• Without award of Grade	Rs. 500/-
• With award of Grade	Rs. 1,000/-
Students from abroad	USD 50

The Registration fee includes instructional materials, tutorials, laboratory and computer use and free internet facility. The participants from academic/research institutes and Industry will be provided with boarding and lodging on additional payment of Rs. 2,000/- in Visitors Block on sharing basis. Students & Research Scholars will be provided with boarding and lodging in Institute Hostels on additional payment of Rs. 1,000/-.

## Selection and Mode of Payment

Selected candidates will be intimated through e-mail. They have to remit the necessary course fee to the Bank as per the details given below. **Outstation participants requiring accommodation and boarding facilities have to pay Rs. 2,000/- (for Faculty & Industry)/ Rs. 1000/- (for Students & Research Scholars) in addition to the course fee.**