

## Overview of the Course

Advanced materials, where first consideration is given to the systematic synthesis and controlling the structure of the material in order to provide precisely tailored set of properties for demanding applications. For higher level of industrialization industries needs materials with a precisely tailored set of properties. It includes all kinds of composites- Nano composites, bio-composites, natural fiber products, membrane, biomaterials, nano- materials etc.

In the present course, research and development in the area of bio-composite, bio-adhesive, bioplastic, keratin based products and simulation software will be covered. It will assist the researchers and staff to know the latest information in this area and to conduct research in it.

The primary objectives of the course are as follows:

- i) Exposing participants to the latest research and development in the area of bio-composite and innovative materials.
- ii) Building in confidence and capability amongst the participants to conduct research in the area of advance materials.
- iii) Providing exposure to practical problems and their solutions, through case studies and live projects in advance materials like shape memory materials.



**Prof. Arun Gupta** is a Professor and Director of Centre of Excellence for Bio-composites and Innovative materials, Faculty of Chemical & Natural Resources Engineering, Universiti Malaysia Pahang, Malaysia.

He have developed number of new products such as nano-wood composite, soya and NRL based bio-adhesive, biodegradable plastic and keratin based cosmetic and pharmaceutical products. He have published more than 100 research articles in high ranked journal and more than 100 papers in various national and international conferences. He got two US patent granted and have filed more than 10 Malaysian patent. He received number of national and international awards in various research exhibitions. He received four gold medal and one special award in INPEX, US, one special medal and one gold medal in BIS, U.K and several gold medal and special awards in research exhibitions in Malaysia. Under his supervision, he has graduated four PhD and four master's student. He has established start-up company, "UMP KeraglowSdn.Bhd". To commercialise the keratin based research, under the brand name of "keraglow". It is the first keratin protein producing plant in Malaysia.



**Dr. S. Suresh** is an Assistant Professor-I & Former Head of Chemical Engineering Department, MANIT Bhopal. Earlier to MANIT, He has worked in ICMS (JNCASR) Bangalore, IIT Kanpur and Pondicherry University.

Earlier to Head of the Department, he has served as a Department Coordinator for 03 years since 2013. He has supervised 08 PhD students, 40 MTech students, 120 BTech/project students and few students along with co-supervisors. He has published 01 Indian Patent and published more than 100 research papers. He has also 02 International books and more than 16 International book chapters and 05 book proceedings. He has received Ph.D in Chemical Engineering from IIT Roorkee, India. He has received several honors and awards & R&D projects (mostly Govt. Agencies), among them, Dr. Suresh was the recipient of Post-Doctoral Fellow awarded by (Fulbright office), Govt. of India and in this award, he has associated at *The City University of New York, USA* (2017-2018). He was also therecipient of Visiting Faculty awarded by MHRD, Govt. of India. During this award, he has deputed to *Asian Institute of Technology Thailand* for January-May, 2016.



**Dr. Sunder Lal Pal** is an Assistant Professor-I of Chemical Engineering, MANIT Bhopal. He has received Ph.D in Chemical Engineering from IIT Kanpur, India. He was also associated with IIT Kanpur for seven years for the post of Project engineer.

He is one of the recipients of SHELL India fellowship from SHELL Research lab, Bangalore. He has supervised five PhD students and published more than thirty five research papers in SCI Journals and guided 25 M. Tech theses. Apart from this, more than 50 UG projects has been done till date. He has handled two research projects (One is IMPRINT project from DST of India) and result of these has been submitted for possible Indian Patent and other is on development of Camouflage paint.

### Who can participate?

-This program is open to the Faculty, UG, PG students, and Research Scholars working or interested in bio-composite and innovative materials from various Institutes.

-Engineers/Scientists working in Industries, Interested in bio-composite and innovative materials.

### 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 registration form and complete web registration by online payment of Rs. 500/-. 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 "Biocomposite and Innovative Materials" from the list and click on save option. Confirm your registration by clicking on Confirm Course.

### Registration

Participants	Amount
Faculty & Scientists	Rs. 2,500/-
Industry/Consultancy firm	Rs. 5,000/-
Students & Research Scholars	Rs. 1,000/-
Students from abroad	\$300

The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hours free internet facility. Boarding, lodging and meal charges are not included in the fees. The participants will be provided with accommodation on a payment basis.

### Selection and Mode of Payment

Selected candidates will be intimated through e-mail. They have to remit the necessary course fee (Mandatory for all) and boarding & lodging fee (if boarding & lodging is required) to the Bank as per the details given below.

Account Name	DIRECTOR MANIT BHOPAL
Account No.	10020150107
Bank	State Bank of India
Branch	MANIT BHOPAL
Branch Code	001608
IFSC	SBIN0001608
MICR Code	462002014
SWIFT Code	SBININBB

Candidates registering early will be given preference in short listing process. For any queries regarding registration of the course, please contact the Coordinators:

**Dr. S. Suresh & Dr. Sunder Lal Pal**

Department of Chemical Engineering

Email: [ssureshchemengg@gmail.com](mailto:ssureshchemengg@gmail.com), +91-8989005393, 91-9479961203 & +91- 7554051802, 1806.

#### Course Venue: Virtual Mode

The venue of the course shall be the G-9 and Department of Chemical Engineering, Maulana Azad National Institute of Technology (MA-NIT), Bhopal.



One Week GIAN Course on

**BIOCOMPOSITE AND INNOVATIVE MATERIALS**  
(25-29<sup>th</sup> January, 2022)

**INTERNATIONAL FACULTY**

**Prof. Arun Gupta**

Professor and Director of Centre of Excellence for  
Bio-composites and Innovative materials  
Faculty of Chemical & Natural Resources  
Engineering, Universiti Malaysia Pahang, Malaysia

**COURSE COORDINATORS**

**Dr. S. Suresh**

**Dr. Sunder Lal Pal**



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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**

Maulana Azad National Institute of Technology (MANIT), an Institute of National Importance, formerly known as Maulana Azad College of Technology MACT. Presently, along with about 200 faculties and 4000 students, the institute is successfully meeting the objectives of producing skilled manpower of the highest quality to cope up with challenges of ever evolving industrial needs of the country. The institute currently runs 13 UG and 20 PG courses and research programs leading to Ph.D. Bhopal is the capital of Madhya Pradesh and is known as city of Lakes and Hills. It is well connected to all parts of the country by rail and air. MANIT is about 9 km from Bhopal city railway station. Weather in Bhopal is normally pleasant (25°C to 38°C) with light rains in July-Aug.

**About the Department**

The Department of Chemical Engineering offers the following academic programs: 1. B.Tech in Chemical Engineering, 2. M.Tech in Chemical Engineering and PhD program. Chemical Engineering has been started to cater to the needs of the Indian Industry and offer a number of courses dealing with the fundamentals, design aspects, project and the industrial applications. Department also has all well-established UG and PG laboratories. In addition to that, Department has all state of art facility with well-equipped instruments such as HPLC, GC-MS, AAS, FT-IR, UV-Vis Spectrophotometer, Photoreactor, Indigenous Low & High Plasma Photocatalytic reactor, Batch & Tubular Reactors, High Pressure Catalytic Microreactor, Indigenous Solar Desalination, Solar Dryer & Microbial Fuel Cell etc. Department recently has signed MOUs with some leading industries. In addition to above, Chemical Engineering Students Association (ChESA) and Indian Institute of Chemical Engineer (IIChE) Students Chapter are functioning at Department.

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**ON**  
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(25-29<sup>th</sup> January, 2022)

**Registration Form (online/offline/spot)**

**Name of the Candidate (Capital letters):**  
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**Address:**  
.....  
.....  
.....

**Fax:** .....

**Phone: (R)..... (O) .....**  
**(with STD code)**

**E-mail:** .....

**Qualification:** .....

**Present Position:** .....

**Relevant Experience:** .....

**PAYMENT DETAILS:**

Bank Name: .....

Amount: ..... DD no: .....

Date: .....

**Date:** **Signature of Applicant**

**Date:** **Signature of Sponsoring Authority with seal**

**(This form can be xeroxed for more participation)**