

# ATRIA INSTITUTE OF TECHNOLOGY

Anandanagar, Bengaluru – 560 024

Department of Basic Science Engineering & Humanities



### Highlights

**About the Department** 

Webinars

Communication classes for Lab Instructors

**Faculty Achievements** 

A Cordial Welcome to the new tutors of the Department

# For Internal Circulation

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# About the Department



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Professor & Head,
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The department of Basic Sciences Engineering and Humanities is a first rostrum all the aspiring engineers step on to. It strongly believes that knowledge is the base of all basic sciences and it strives to achieve this power to its best. This Department is devoted to foster the fundamental principles and understanding of Science to enhance the students' basic knowledge of Engineering. It offers excellent introductory courses in Mathematics, Physics, Chemistry and English which will both instruct and stimulate students in all of the University's programs. The department believes that engineers are a significant source of technological innovation and expertise. To achieve this belief, the department continuously fosters students to focus on their brainpower on solving problems through the application of science and mathematics, discovering new ways to make life better for the general public. Students are guided by well experienced and highly qualified faculty members who strive to improve the students learning, research and development processes. The "spark" of creativity is a hallmark of the department and it endeavor to create the same zest amongst all the budding engineers and this process is unceasing.

## WEBINARS CONDUCTED

### **WORLD OZONE DAY**

Date: 16<sup>th</sup> September 2020



The "World Ozone Day" was observed by the department through organizing a webinar to create awareness amongst the students towards preserving the ozone layer. The speaker Mr.Basavaraj took efforts to sow the seeds of how the ozone layer is depleting and how humans can save it for the well-being of the coming generations.

The speaker carefully listed out the various causes that lead to the depletion of the ozone and stated how this depletion has seen a reduction during the pandemic times. Sir had also used statistics to show the range of depletion of the ozone which helped the audience to understand the harm we are doing to our environment. He also motivated the audience to take up primary measures to protect this basic living structure so that the world would be a better place to live in

World Rose Day is observed every year on September 22nd in the memory of Melinda Rose, who was diagnosed with Askin's Tumor, a rare form of blood cancer. The department had organized a webinar to commemorate this day to help students understand the root cause for the deadly disease and wways to prevent it. Dr. Niti Raizada was invited as a speaker who had prepared a presentation in brief about the various types, causes, symptoms and precautions to be undertaken for those who fall in the dead line of being affected with cancer. The speaker threw light on how the illness would affect both the genders and also clearly explained how this chronic illness can be faced,the challenges witnessed by the patients and how to overcome it with a positive light. More emphasis was exerted on the ways to identify the bodily reactions and symptoms towards this illness and how one had to get an access to timely quality diagnosis and treatment.

The speaker had also briefed about the therapies and treatments available in the medical sector and the several ways to get hold of them for speedy recovery. The most important session was the Question and Answer Forum, where the audience actively participated by asking queries. The speaker carefully answered to the questions and tried resolving the doubts of the audiences

### **WORLD ROSE DAY**

Date: 20<sup>th</sup> September 2020



## YOUR EYES IN COVID-19

Date: 28th September 2020



As a part of health and hygiene, a webinar on "Your Eyes in COVID 19" was organized by the department on the 28th of September 2020. Dr. Hardik Nanavati, from Narayana Nethralaya, Bangalore was invited as the guest speaker, who trained students on the hygiene they had to follow to protect their eyes during the pandemic. The session seemed to be a useful one to all the participants during this pandemic as it gave them the best outcomes. The most interesting part of the webinar was the Question and Answer forum, where audience several relevant problems raised ophthalmology particularly relevant to the present situation and the speaker took time to respond to the queries and also gave suggestions for the same.

The BSE Department had organized a webinar on "The Importance of Blood Donation" on the 1<sup>st</sup> of October 2020 to create an awareness on the importance of blood donation, a life saver to those in need. The speaker Mrs. Soumi Datta a social worker, craftly explained on how, donating blood could save millions and how this activity could also rejuvenate the donor. She laid emphasis on the process of blood donation and how one had to take of oneself before and after donating blood, which is an important aspect in this process. She also explained the process of how the donated blood would be passed on the needy and the ways through which one could get access to the same. This seemed to be an important webinar as it would be helpful at times of emergency.

#### IMPORTANCE OF BLOOD DONATION

Date: 01st October 2020



### WILDLIFE, MANAGEMENT AND BEYOND

Date: 07<sup>th</sup> October 2020



On the occasion of World Wildlife Week, a webinar was organized on the topic "Wildlife, Management and Beyond" on 7<sup>th</sup> of October 2020. The speaker Mr. Ramesh Belegere took a walk through to the titled of the webinar by presenting pictures of few endangered species which was rarely noticed by the human eye. He also quoted multiple examples of how animals were ill-treated by humans for their own benefit and the laws which were passed against them.

Moreover, the main aim of this webinar was to help the audience to understand, how ecological balance would be disturbed if wildlife is left unprotected and which would further lead to a complete imbalance in the earth. He also asked the audience to take up specific managerial ideas to protect wildlife for the well-being of the society and for the future generations

The BSE Dept, had organized a webinar titled "Development and Natural Disaster" on 13th October 2020 by Ms. Sujatha S R. The purpose of this webinar was to delineate, from a social scientific perspective, and concentrate on the major factors involved in disaster rehabilitation from a necessarily superficial but nevertheless accurate and useful viewpoint. The speaker laid emphasis on how natural and human-made disasters affect human population and how it is becoming more common worldwide, due to a myriad of factors related to population growth and urbanization.

She exclaimed how modernization, urbanization and globalization has led to major natural disasters and how humans have become invaders on their own land. She listed several types of disasters, both natural and manmade and how such calamities has posed a threat to human life. Light was specifically thrown on how to overcome and control such disasters and contribute to the development of the nation.

### DEVELOPMENT & NATURAL DISASTER

Date: 13th October 2020



# Role of Mathematics for budding Engineers on the eve of National Mathematics Day

Date: 22<sup>nd</sup> December 2020





National Mathematics Day is celebrated on 22 December annually to commemorate the birth anniversary of the famous mathematician Srinivasa Ramanujan. To commemorate this eve a webinar was organized by Department of Basic Science and Humanities. Dr. Dinesh P A, Associate Professor from M. S Ramaiah Institute of technology was invited as the speaker.

The objective of this webinar was to show how the language of mathematics consists of a substrate of using technical many natural languages terms and grammatical conventions which are peculiar mathematical discourse. The speaker emphasized on the idea that mathematical words have different shades of meaning in the day to day aspects of life. He pointed out on the ideology of how, faced with mathematical problems, students have to find ways to use mathematics to represent the situation, manipulate the representations to find solutions, interpret the solution in the original context, and look for ways to generalize the solution to a whole class of problems. This webinar thus provide a detailed theoretical discussion about ideas concerning mathematics and its implications for society.

# CO-CURRICULAR ACTIVITIES

The department had organized a Slogan/Caption Writing Competition on the 17<sup>th</sup> of November 2020 to give a break to students during the pandemic. The competition took place virtually, where students were sent a Google Form which consisted of the image for which the slogan/caption had to be written. The theme(image) for the slogan writing competition was the "Efforts of the Frontline Warriors". Students actively participated in the competition which was judged by Prof. Karthik P, Assistant Professor from BGS College and Prof. Krishnamurthy M, Assistant Professor from New Horizon College on the basis of Creativity and Relevance to the theme.

The following Events are conducted:

- Beat Boxing
- Best out of Waste
- Face Painting
- Slogan writing competition









## **FACULTY ACHIEVEMENTS**

### Hearty congratulations to Prof. Nagendra Naik



Title: A remark on Eigen values of signed graph in Journal of applied Mathematics, statistics and informatics, 15(1), 2019

JAMSI, 15 (2019), No. 1

33

#### A remark on eigen values of signed graph B.PRASHANTH, K. NAGENDRA NAIK AND K. R. RAJANNA

#### Abstract

In this paper we present some results using eigen values of signed graph. This precipitate to find the determinant of signed graph using the number of vertices.

Mathematics Subject Classification 2010: 05C22, 05C50, 15A18 Keywords: signed graphs, Marked graphs, balance, Switching, Antipodal graph.

#### 1. INTRODUCTION

For all expressions and notation in graph theory the reader has to refer [4]. We consider only finite, simple graphs without self-loops.

A signed graph  $\Gamma = (G, \sigma)$  is a graph whose edges are assigned by positive sign or negative sign. Where G = (V, E) is called basic graph (underlined graph) of  $\Gamma$  and  $\sigma$ is a bijective mapping between the set of edges to the set of signs (positive and negative sign).

Cartwright and Harary [5] deliberates that vertices and edges of a sign graph represent persons and their relationship respectively, each of it fixes itself as positive or negative based on its nature. If two persons are friendly to each other then their relationship is positive. In a similar manner if two persons dislike each other, their relationship is negative. This signed graph network was discussed by Chartand [6]; Harary et. al. [7].

Katai and Iwai [8], Roberts [9] and Roberts and Xu [10] presented applications of signed graphs in literature, because of their extended use in modeling a multiple socio-psychological process and also because of their connections with many classical mathematical systems [3].

# **FACULTY ACHIEVEMENTS**

### Hearty Congratulations to Dr. Venkatesh S, Department of Chemistry for getting his research works published.



#### Dr. Venkatesh Sadhana

- 1. "Methylene Blue Degradation by AgCuO Bimetallic Nanomaterial, Green Synthesized using Cordia sebestena leaves" in Research Journal of Pharmacy and Technology. 13 (7), July (2020)
- 2. Title: "Antibiotic Potential of Phytochemicals in Punica granatum -Pericarp and Their Proposed In-Silico Mechanism of Action" published in International Journal of Green Pharmacy-14, (1), Jan-Mar, 2020

ISSN 0974-3618 (Print) opyr4-360X (Online)

RESEARCH ARTICLE

Methylene Blue Degradation by AgCuO Bimetallic Nanomaterial, Green Synthesized using Cordia sebestena leaves

Lokesh Ravil, Venkatesh Sedvaraji, Saranya Shankar', Ranjitha Dhevi V, Sundar', Gayathri Segarani, Suganya Kumaresan', Venkatesh Sadhmar's

'Department of Botany, St. Doseph's College, Bengaluru, Sci Wris Life Sciences Pt. Lid., Vellore.

'School of Biosciences and Technology, VIT University, Vellore.

#### A DETDACT

This study reports green synthesis of AgCuO binnetallic nanomaterial from leaf extract of Corbia sebestena and leaves are tich in flavonoids, lumins, saponin, phenols and alkaloids. Aqueous extract of Corbia sebestena susuad as catalyst (1%) and polyethyleneglycol (PEG) was used as capping agent (0.1%) in a reaction mixture containing IM AgNOs and IM CuSOs. The reaction was repeated with AgNOs and CuSOs individually for our containing IM AgNOs and IM CuSOs. The reaction was repeated with AgNOs and CuSOs individually for Current Corbins of the Corbins of t

KEYWORDS: AgCuO Nanomaterial, Bimetallic Nanomaterial, Nanomaterial green synthesis, Methylen blue degradation, Industrial effluent treatment, wastewater treatment.

RIGINALARTICL

# Antibiotic potential of phytochemicals in *Punica granatum* pericarp and their proposed mechanism of action by *in silico* studies

Lokesh Ravi¹, Venkatesh Sadhana², Divya Jindam³, Suganya Kumaresan Venkatesh Selvarai³

penistry, Atria Institute of Technology, Bengaluru, Karnataka, India, 'SciWris Life Sciences Pet. Ltd., Velle mil Nadu, India

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Aim. Touring grounding is a very important plant with commercial interest and is known for its attack teams in traditional medicine. This study focusion on analyzing the articlearctural potentials of the persiany extracts using the commercial properties of the principle of the persiany extracts. Figure and the properties of the principle of the

Key words: ADMET, antibacterial activity, methicillin-resistant Punica aureus, protein-ligand docking, Punica avenutum

#### INTRODUCTION

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Princia granation is commonly known as possegranate. Primary originated from Iran, but also found in Northern India, China USA, and over the Mediterranean region. <sup>12</sup> The pomegranuse fraiting plant is anatomically divided into different compartments including root, bark, flower, leaf, peel, juice, and seeds which ar suggested to possess muny pharmacological and toxicologica.

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#### Fluid Flow in Composite Cylindrical Regions

Umadevel<sup>\*</sup>, D.V. Chandrashekhar<sup>\*</sup>, P.A. Dineshi<sup>\*</sup>, D.V. Jayalakshmammal
<sup>\*</sup>Dapartment of Mattematics. Airs Institute of Technology, Banqaiore – 800034, India
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Regressits: Fluid flow, Briminian equation, stokes equation, interface boundary conditions, seminability parameter.

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#### 1. Introduction

The idea of fluid from throughlyant a porous media fields its importance in applied sciences an anginuoming fields such as filtration, accountees, geochemistry, said mechanics, such mechanics petroleum engineering, biomedical engineering, structural impineering, and in the field of geoscience like hadrongcokey, petroleum geology, geophysics, and also in the inter-disciplinary fields of biology and happlysisses, material science. In addition, the principle of promum flow has applications for take

constitutions. Bujo Sekhar and Amazimanth et al. [2] described the flow field origing bring plantage of constitutions. Bujo Sekhar and Amazimanth et al. [2] described the flow field origing Darry's appointment of the property of the prope

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### **Hearty Congratulations to Prof. Umadevi R**



Prof. Umadevi R

Title: Fluid flow in composite cylindrical regions- Advanced Engineering Forum – ISSN:2234-991X, Vol 40,pp 63-72 April 2021

### COMMUNICATION SKILLS CLASSES FOR LAB INSTRUCTORS

The HR Department in collaboration with the Department of Humanities took an initiative to engage the Lab Instructors of all the departments amidst the pandemic, through an innovative method, namely a Communication Skills Class. The major intent of this class was not only to spend time wisely during the free hours but also to spend it effectively. This class was molded in a way to help the Lab Instructors of all the departments to develop their English speaking skills and gain prominence in the competitive world. The Human Resource Manager Mr. Rohan Aditya Gupta proposed a plan to Dr. Nalinakshi N, the Hod of BSE department and Ms. Jeslin G, Assistant Professor who warmly accepted the proposal and started working on it.

The participants were divided into two groups based on their age and the classes were held every afternoon from 2:00 PM to 4:00 PM beginning from the  $8^{th}$  of June 2020. A closed type syllabus was crafted by the instructor to suit the needs of the participants. The following are a list of topics which was discussed during the class:

- Self-Introduction
- Parts of Speech
- Vocabulary building
- Pronunciation and Intonation
- Tenses
- Diary writing
- Story writing
- Conversation and dialogue building
- Identifying common errors while speaking in English
- Recognizing and correcting the errors made due to Mother Tongue Influence
- Understanding the use age of commonly used words in day to day life
- General Grammar: Tenses, Synonyms, Antonyms, homonyms etc.
- Developing speaking skills
- Group discussions
- Debates
- Pick and speak
- Learning words through movies
- Movie review
- Techniques used in developing Interpersonal Communication
- Overcoming stage fear and developing confidence

The syllabus touched upon various arenas pertaining to communication skills and the same was altered on request by the participants. Apart from the learning criteria, major part of the time was spent on developing speaking skills and a change was witnessed by the participants at the end of the program. In order to check their progress a speech competition was conducted on the 13<sup>th</sup> of August 2020 which was judge by Mrs. Uma and Ms. Ramya, Assistant Professors of Mathematics from the BSE department.

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NAME

16 / 20 Shivaprasad T

18 / 20 Tejdeep.D.S 17 / 20 PRASANNA R

17 / 20 Harshitha. P

16 / 20 ASHOK K S

17 / 20 Harish s

17 / 20 Pavan aradhya s s

17 / 20 Krishna moorthy K.J.

16 / 20 M V ASWATHNARAYAN, Civil Engineering

DEPARTMENT

Library

ECE

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Mechanical

EDUCATIONAL QUALIFICATION

Diploma in Mechanical Engineering

Mechanical Engineering Diploma in Mechanical Engine

MLISc

Diploma

Dip in ECE

Engineering

Electronics and commun Diploma in computer scien

### Cordial Welcome to the New Tutors of the Department



Prof. Pavithra. K

Prof. Pavithra.K holds a Master's Degree in Mathematics, with a specialization in computational fluid dynamics from Central College, Bangalore University. With a passion towards teaching, she started her journey with AIT as an Assistant Professor.

Prof. Ramya. N

Prof. Ramya N has completed her Masters in Mathematics from Bangalore University with Graph theory and MHD specialization. With a passion towards teaching, she began her career as an Assistant Professor with AIT.





Dr. Prakashaiah B G

Dr. Prakashaiah B G received his Doctoral degree from National Institute of Technology Karnataka (NITK), in the field of Chemistry. During his research he had published seven research papers in reputed International journals and presented six research articles in International conferences. His research interest is on the Development of Novel Corrosion Inhibitors and Study on the Electrochemical Behavior of Metal in Different Corrosive Media. Sir has also received the junior and senior research fellowship from National Aerospace Laboratories- CSIR to carry his Ph.D. He has qualified CSIR-NET and GATE and has six years of research experience in NAL-CSIR. Sir is currently working with AIT as Assistant Professor.

#### Prof. Nagendra Naik

Prof. Nagendra Naik. K holds a Masters' degree in Mathematics from Tumkur University. He is currently pursuing his Ph.D. and has completed his open seminar on Graph Theory. Sir has nearly 7 years of experience in the field of academic and research and has attended several seminars and presented papers at National conferences. Sir is currently working as an Assistant Professor with AIT.





Prof. Jeslin G

Prof. Jeslin G holds a Masters degree in English with three gold medals from Bangalore University. She also holds a diploma degree in English Language Teaching (PGDELT) from the Regional Institute of English, South India. She is working as an Assistant Professor in the department of Humanities, AIT.

E ditore

Dr. Nalinakshi N

Dr. PrakashaiahB G

Mr. Chethan P.B Ms. Jeslin G