

RISE@AGU-2025 RESEARCH, INNOVATION, SKILLS & ENTREPRENEURSHIP





DR. C.V. RAMAN UNIVERSITY

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RESEARCH IN AISECT GROUP OF UNIVERSITIES (AGU)



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AGU RESEARCH- A ROAD MAP FOR EXCELLENCE

The AISECT Group of Universities (AGU) is a pioneer in research, skill development, innovation, and entrepreneurship. With the advent of the National Education Policy (NEP) 2020, a new era of quality research and holistic learning emerged, complementing the Skill India Mission (2015), which emphasized industry-relevant competencies.

At the forefront of this movement, Rabindranath Tagore University (RNTU), a flagship institution under AGU, has been a hub of research and innovation since 2011. It was an early adopter of skill electives in 2013 and became the first private university in Central India to establish an Atal Incubation Centre. Recognized for its sustainability initiatives, RNTU was among 17 campuses selected by the Ministry of New and Renewable Energy (MNRE) for green campus funding.

AGU's research ecosystem is powered by 500+ PhD-qualified faculty and funding from esteemed organizations like ICSSR, NABARD, MEITY, IFFCO, DST, DRDO, and MNRE. The Core Research and Innovation Group (CRIG) allocates 1 crore annually for internal research, supporting 35+ projects and 100+ patents. With over 15 international and 150 national research collaborations, AGU fosters interdisciplinary research and promotes industry-academia partnerships.

Further strengthening its innovation ecosystem, CVRU i-TBI, hosted by Dr. C.V. Raman University, Bilaspur, Chhattisgarh, is an inclusive Technology Business Incubator (i-TBI) supported by the Department of Science & Technology (DST), Government of India, under the NIDHI i-TBI scheme. This incubator is dedicated to nurturing innovation and entrepreneurship in Chhattisgarh and Central India, offering incubation support for idea-stage startups.

Spanning 10,000 square feet, CVRU i-TBI houses state-of-the-art facilities, including a FabLab, Prototyping Laboratory, co-working spaces, meeting rooms, video conferencing facilities, a computer lab, and a high-speed internet/Wi-Fi network-all designed in accordance with NIDHI i-TBI guidelines.

Through its cutting-edge infrastructure, research-driven ecosystem, and strategic industry partnerships, AGU is shaping the future of education, empowering students with the skills, knowledge, and entrepreneurial mindset to drive innovation and societal progress.



CONTENT

1.	AGU- Universities of New India	1
2.	CRIG-AGU	4
3.	Centers of Research Excellence	7
4.	Atal Incubation Center (AIC) RNTU	11
5.	Research Resources	18
6.	Food Processing Unit	23
7.	Research Projects	27
8.	Patents	42
9.	Research Paper Publication	51
10.	Book / Book Chapters Publication	52
11.	Consultancy at AGU	53
12.	Collaboration & MoU	59
13.	Research Events at AGU	62
14.	AGU Publications (Inhouse publication)	64
15.	Awards	67



1 AGU – UNIVERSITIES OF NEW INDIA

ABOUT AGU

The AISECT Group of Universities (AGU) emerged in the early 1980s, rooted in the AISECT Network's initiatives for skill development and distance learning. Encompassing six leading universities, AGU is committed to providing affordable, high-quality education, fostering research, and nurturing entrepreneurship. Strategically located in rural and tribal regions, these universities are trailblazers in private education, working to bridge educational gaps and empower underserved communities. Combining traditional values with modern approaches, AGU creates an enriching learning atmosphere. Named after distinguished figures like Dr. CV Raman and Rabindranath Tagore, these campuses are symbols of dedication to knowledge and innovation. AGU is nationally and internationally recognized for its strengths in research, innovation, and entrepreneurship. Extending beyond its campuses, AGU also drives social and economic progress, empowering communities through education.

- Dr. C.V. Raman University, Bilaspur, Chattisgarh (CVRU, Bilaspur)
- Rabindranath Tagore University, Bhopal, Madhya Pradesh (RNTU, Bhopal)
- Dr. C.V.Raman University, Vaishali, Bihar (CVRU, Vaishali)
- AISECT University, Hazaribagh, Jharkhand (AU, Hazaribagh)
- Dr. C.V.Raman University, Khandwa, Madhya Pradesh (CVRU, Khandwa)
- SCOPE Global Skills University, Bhopal, Madhya Pradesh (SGSU, Bhopal)



AGU STRENGTH

- 6 Premier Universities
- 43 Advanced Research Centers
- 500 + Research Faculties with Ph.D.
- 30K +Students
- 1.7K + Faculty
- 340 + Labs
- Food Processing Unit
- Atal Incubation Center
- Core Research &
- Innovation Group
- ・ ITBI-Nidhi CVUR, Bilaspur のの

AGU-THE CUTTING EDGE

- ✓ NIRF Ranking
- ✓ NAAC Accreditation
- ✓ Atal Incubation Center by Niti Aayog,Gol
- ✓ PMKK within campus
- ✓ 15 + world class Industry Centers
- ✓ Publishing two Research Journals Anusandhan and Shodhaytan
- ✓ 70+ Active Start ups
- ✓ 145 patents of social concerns
- ✓ ₹1 Crore annual fund for internal research
- ✓ International Center for Arts Culture and literature
- ✓ International Association IAWEES
- ✓ Vishwarang and Shodh Shikhar-Vigyan Parv Flagship events of AGU
- ✓ ITBI, Nidhi, CVRU, Bilaspur



1

WHAT RESEARCH MEANS TO AGU

At AGU, research extends beyond the traditional notion of a structured process; it is a dynamic pursuit of innovation, aimed at generating new knowledge, technologies, and societal advancements. AGU places a strong emphasis on producing tangible, impactful results, viewing research as a catalyst for both innovation and social progress. The aim is to extend research outcomes beyond academic circles, delivering direct benefits to society. Committed to practical, community-oriented research, AGU measures success by the real-world changes it inspires, not just academic contributions. By cultivating an environment that supports meaningful research, AGU strives to make a lasting impact on society, whether through technological advancements, streamlined practices, or solutions to critical challenges. AGU's research vision seeks to reshape traditional academic boundaries, fostering positive societal transformation.

RESEARCH PHILOSOPHY IN AGU

AGU's research philosophy is built upon in four foundational pillars. First, the Positivist Research Philosophy focuses on analysing problems objectively, where researchers maintain a stance free from personal biases. Second, the Interpretive Philosophy emphasizes understanding problems from a subjective viewpoint. Third, the Pragmatist Research Philosophy is centred on practicality, guiding the choice of methods based on real-world facts. Lastly, Realism encompasses both direct realism, which perceives things as they appear, and critical realism, which considers potential underlying complexities or deceptions. These pillars foster a research environment tailored to each study's unique problem and goals.

AGU stresses the importance of preliminary, literature-based surveys to identify research gaps before formulating questions and objectives. Ethics are integral to AGU's approach, ensuring principles of honesty, objectivity, carefulness, and respect for intellectual property. AGU uses plagiarism detection software but also emphasizes integrity in data handling, result reporting, and analysis. Whatever the research philosophy, AGU upholds strict ethical standards, underscoring integrity and credibility throughout the research process.



IMPLEMENTATION OF RESEARCH PHILOSOPHY AT AGU

Implementation of Research PhilosophyatAGU

AGU is committed to research integrity and impactful contributions, supported by a well-structured research ecosystem. The Research and Development Department (RDD), under the guidance of the Vice Chancellor, centrally manages Ph.D. research administration, ensuring smooth governance and academic excellence.

The University Teaching Departments (UTDs) play a crucial role in mentoring scholars, fostering an environment that



nurtures academic growth and innovation. Independent Research Centers, led by specialized Coordinators or Directors, drive focused, domain-specific research, adapting to the evolving needs of various disciplines.

The Core Research and Innovation Group (CRIG) is responsible for managing both internal and external research funding, ensuring that all projects align with AGU's strategic objectives. Collaboration remains at the core of AGU's research vision, extending partnerships with institutions and industries, reinforcing the belief that research should act as a catalyst for societal transformation and real-world impact.

AGU's ecosystem fosters teamwork, innovation, and problem-solving, striving to position itself as a center for groundbreaking research. From RDD to CRIG, every unit contributes to AGU's mission of expanding knowledge and enhancing societal well-being through collaborative, solution-driven research. Through this structured framework, AGU aspires to shape the future by generating and disseminating meaningful knowledge.

KEY INDUSTRY HUBS WITHIN AGU



2 CRIG-AGU

CRIG – A UNIQUE CONCEPT



The Core Research & Innovation Group (CRIG) is a strategic initiative dedicated to fostering a strong research ecosystem, driving innovation, and enhancing academic excellence in AISECT Group of Universities (AGU). CRIG plays a crucial role in shaping the research landscape by promoting interdisciplinary collaboration, facilitating knowledge exchange, and supporting groundbreaking projects across various domains.

CRIG focuses on establishing structured research frameworks, ensuring that faculty and students engage in high-impact research, publish in reputed journals, and contribute to technological advancements. The group emphasizes innovation-driven solutions, encouraging patent filings, industry partnerships, and research-based entrepreneurship. Through national and international collaborations, CRIG provides a platform for scholars to engage in cutting-edge research while addressing societal challenges. Additionally, it leverages digital platforms and social media to amplify research visibility, ensuring that scholarly contributions gain widespread recognition.

By integrating academic research with real-world applications, CRIG continues to strengthen the research ecosystem, making significant contributions to education, industry, and society.





RESEARCH VALUES AND GUIDING PRINCIPLES

The Core Research & Innovation Group (CRIG) is committed to fostering an equitable research environment that values diverse perspectives and upholds robust research principles. Our primary objective is to cultivate innovation and adaptability, ensuring that research remains dynamic and responsive to emerging challenges. Integrity and transparency serve as the foundation of our decision-making, complemented by groundbreaking proposals that enhance CRIG's impact.

Open communication is the core of our philosophy, facilitating a continuous exchange of ideas between CRIG and university researchers. We are dedicated to building strong partnerships that drive long-term growth and contribute significantly to AGU's research ecosystem. Our approach emphasizes the dissemination of research for societal progress, striving for excellence in social and applied research.

Striving for the future, we aim to simplify research processes and create a supportive environment tailored to researchers' needs. By aligning institutional objectives with individual research goals, we foster a collaborative framework that fuels both personal success and the advancement of knowledge at AGU. The university's commitment to research excellence ensures a thriving academic community, reinforcing CRIG's role in driving meaningful and impactful research.

5



MULTIDISCIPLINARY RESEARCH

The AISECT Group of Universities (AGU) provides a dynamic ecosystem for multidisciplinary research, encouraging collaboration across diverse fields to address complex real-world challenges. By integrating expertise from science, technology, engineering, management, humanities, and social sciences, AGU promotes innovative, solution-driven research that has a meaningful impact on society.

Through interdisciplinary partnerships, AGU bridges gaps between traditional disciplines, enabling faculty and students to work on cutting-edge projects in areas such as artificial intelligence, renewable energy, sustainable agriculture, healthcare technology, and digital education. The establishment of Research Centers of Excellence further strengthens this initiative, providing resources, funding, and industry collaborations to enhance research outcomes.

AGU's Core Research & Innovation Group (CRIG) plays a pivotal role in driving multidisciplinary research by facilitating joint projects, supporting cross-departmental research initiatives, and promotes partnerships with national and international institutions. Memorandums of Understanding (MoUs) with industries, research organizations, and academic institutions help expand AGU's research footprint, ensuring global exposure for its scholars.

By leveraging advanced technology, policy-driven frameworks, and a collaborative research environment, AGU remains at the forefront of multidisciplinary innovation, empowering researchers to develop groundbreaking solutions that contribute to academic advancement and societal progress.

3 CENTERS OF RESEARCH EXCELLENCE

NEW DIMENSIONS OF RESEARCH

AGU has established multiple Centers of Research Excellence to enhance research and educational impact. These centers provide dynamic platforms for faculty and students to collaborate with diverse research communities. Each center follows a structured framework focused on five key pillars of research excellence: Formation, Staffing, Work Patterns, Performance, and Financial Support. This strategic approach ensures smooth operations, significantly advancing knowledge and fostering a thriving academic environment. By prioritizing these fundamental elements, AGU's Centers of Research Excellence uphold high standards, drive innovation, and promote interdisciplinary collaboration to tackle critical challenges and advance scholarly pursuits.

Formation of Centers of Research Excellence

AGU's constituent universities have strategically established 43 Centers of Research Excellence, each designed to address specific needs and leverage available expertise for meaningful societal impact. While each center operates independently, they align with the administrative framework under the university's Dean Academic. These centers foster inclusive collaboration, welcoming faculty members and doctoral students from all disciplines. Each center is led by a Coordinator and supported by research scholars, with AGU uniquely enabling doctoral students and visiting scholars to engage across multiple centers. Center Coordinators facilitate this interdisciplinary collaboration, while Advisory Boards, composed of distinguished faculty and external experts, provide global insights to enhance research quality and impact. By emphasizing inclusivity, leadership, and collaboration, AGU's Centers of Research Excellence serve as dynamic hubs at the forefront of cutting-edge research, driving innovation through impactful projects and activities.

The financial stability of a research center is essential for its success, ensuring the achievement of objectives and the advancement of knowledge. Sustained financial support is crucial for maintaining operations, fostering innovation, and addressing societal challenges. At AGU, research centers receive funding from multiple sources, including institutional support, government grants, industry partnerships, and collaborative research projects. These resources are vital for acquiring equipment, maintaining facilities, supporting personnel, and conducting research activities.

Research centers can generate revenue by collaborating with government research institutions and engaging in consulting projects, functioning similarly to a consulting firm to enhance financial sustainability. This self-financing model allows centers to secure funding for operations and ongoing initiatives. Additionally, AGU provides financial assistance for establishing research facilities and allocates funding through the Center for Research and Innovation Grants (CRIG) to support specific research projects. AGU ensures that its research centers continue to thrive, drive innovation, and contribute to knowledge advancement by diversifying funding sources and actively seeking financial opportunities,.

AGU comprises 43 Centers of Research Excellence across its constituent universities. Rabindranath Tagore University, Bhopal leads with 18 centers, followed by Dr. C.V. Raman University Bilaspur with 14, Dr. C.V. Raman University, Vaishali with 5, AISECT University, Hazaribagh with 2, and Dr. C.V. Raman University Khandwa with 4 centers. These centers are categorized into three groups: Technology, Skill, and Cultural, each dedicated to advancing research in its respective domain.

Technology Centers of Research Excellence

The research centers under this category focus on technology and engineering, integrating various engineering and scientific disciplines. These centers emphasize multidisciplinary research, fostering collaboration both within their domain and across other research categories. With a strong commitment to innovation, they undertake diverse projects aimed at developing comprehensive solutions to complex challenges through interdisciplinary cooperation.



- Center for Renewable Energy and Energy Park
- Agriculture Research Center
- Advanced Material Research Lab
- Center for IoT & Advance Computing
- Center for Advanced Water & Environmental Research
- C.V. Raman Center for Science Communication

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- Raman Center for Science and Communication
- Center for Renewable and Green Energy
- Center for Rural Technology & Entrepreneurship
- Center for GIS and Remote Sensing
- Center for Innovation, Incubation Entrepreneurship Development

🕅 DR. C.V. RAMAN UNIVERSITY

- Center for Agriculture Research
- Bhabha Center for Renewable Energy
- Center for Science Communication

Center for Agriculture Research

DR. C.V. RAMAN UNIVERSITY

- Dr. C.V. Raman Center for Science Communication
- Center for Agriculture Research
- Raman Incubation Centre









8

Skill Centers of Research Excellence

AGU is home to multiple skill centers dedicated to training proficient professionals and researchers. Partnering with renowned industry leaders such as DAIKIN, LUCAS, Microsoft, Frugal Lab, and Tata, AGU also hosts PMKVY, DDUGKY, and approximately eight other skill centers. These establishments provide both skill training and esteemed programs, ensuring students gain industry-relevant expertise. Additionally, various departments operate Skill Academies, integrating skill-based courses into academic curricula. This approach aligns diploma and undergraduate programs with industry requirements, equipping students with both practical skills and theoretical knowledge to enhance their employability and career prospects.

SKILL CENTERS OF RESEARCH EXCELLENCE



- Atal Incubation Center
- Center for Skill Development (Pradhan Mantri Kaushal Kendra)
- Center for Women Entrepreneurship
- Santosh Choubey Center for Social Entrepreneurship
- Livelihood Resource Center

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- Center for Innovation, Incubation & Entrepreneurship Development
- Center for Skill Development and Industrial Consultancy
- Center for Future High End Skill

Cultural Centers of Research Excellence

AGU's Cultural Centers of Research Excellence play a crucial role in preserving and promoting Indian culture at both national and international levels. Operating under the "Vanmali Srijan Peeth," these centers conduct in-depth research on India's rich cultural heritage, encompassing visual, performing, and literary arts. Their work integrates cultural studies into AGU's academic curriculum, enriching students' education with insights into Indian traditions and artistic expressions.

Additionally, AGU's Dramatics School offers diploma and degree programs while actively engaging in research on various theatrical forms. By studying, preserving, and evolving India's diverse performing arts, the school contributes to the broader cultural discourse. Through these initiatives, AGU ensures that students across disciplines gain meaningful cultural exposure, fostering a deeper appreciation and scholarly exploration of India's vibrant artistic and literary traditions.





RNTUER Rabindranath TAGORE UNIVERSITY

- Vanmali Srijanpeeth
- Tagore International Center for Arts & Culture
- Lok Bhasha evam Sanskriti Kendra
- Bhasha Shikshan Kendra
- Bahubhasha Anuvad Kendra
- Pravasi Bhartiya Sahitya Evam Sanskriti Shodh Kendra
- Sanskrit, Prachya Bhasha Evam Bhartiya Gyan
- Parampara Kendra



- Hindi Sahitya Kendra
- Vanmali Srijanpeeth
- Center for Performing Art and Raigarh Kathak
- Chhattisgarh Lok Kala and Sanskriti Kendra
- Rabindranath Tagore International Center of Excellence for Arts & Culture
- Chhattisgarhi Shodh evam Srijanpeeth

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- Vanmali Srijanpeeth
- Center for Buddhist



Vanmali Srijanpeeth



Tagore International Center for Arts & Culture













4 ABOUT ATAL INCUBATION CENTRE (AIC) RNTU

INTRODUCTION

A random idea might lose its track if it is not nurtured regularly in the right way. For a large number of people venturing into the culture of entrepreneurship nowadays, it is very important to educate and support them for the proper growth of their ideas. At AIC-RNTU, we have taken the charge of providing essential services such as fund support, management, mentorship, co-working space, and state-of-the-art technical assistance to the budding business units. By playing the role of both startup incubator and accelerator, we aim at training and mentoring young people to fuel their inner drive to innovate. Our primary objective here is to create



a startup ecosystem and familiarize the visionary brains with the business aspects of an idea and provide them a platform with necessary resources – culture, opportunities, and amenities – to grow their startup units into business enterprises.

The services are offered by AIC RNTU

Co-Working Space

A comfortable and dedicated working space is said to have a visible impact on the performance of the workers. At AIC-RNTU, we give splashy office space to the startups for their exclusive use.

Access To Network & Events

It is imperative to build healthy relationships with the like-minded people in order to learn and refine your perspective. We provide opportunities for the startups to network with the top minds of their industry and get the knack of the real-time business operations from their experiences.

Mentorship

We provide a pool of experts who shall mentor the incubates and guide them with their experience. Our domain-specific and generic network of mentors would acknowledge the challenges faced by the incubates and give them advice in their fields of expertise.

Intellectual Property Rights

It is essential to protect your creation in the growing trend of piracy. We, thus, take care of providing you with the intellectual & property rights to safeguard your startup.

Trainings & Workshops

We conduct different workshops and events to educate the incubates wherein experts provide valuable insights on subjects concerning the development of a startup. We organize both domain-specific and general training sessions to enhance the knowledge of the incubates.

11

HR/Intern Support

As the business flourishes, so it demands more workforce. Thus, we provide the necessary Intern /HR support to fulfill the requirements of human resource.

Access To Labs

Our incubation center houses several labs which are important for the startup units. Some of them are FAB

lab, Rapid Prototyping lab, IoT lab, and shared resources lab.

Company Registration

We will provide assistance and guidance for the registration of the startups.

• Funding

For an idea to take wings and materialize, money is the crucial resource. We have several funding options available (seed funding, etc), and a pool of investors to our disposal which shall pave the way for the startups to blossom through all the stages of development.

Technical Assistance

At our incubation center, the incubates will have access to high-speed internet. We will also provide them with guidance for the domain registration and the hosting space.

Legal & Accounting Support

The sound legal and accounting advice plays an important role in the smooth running of the business. We would be providing the incubates with the necessary legal & accounting support for their seamless development.

HAND HOLDING SUPPORT FOR A SUCCESSFUL STARTUP

Ideate

The Ideate symbolizes the startups that are teeming with ideas but still have no concrete action plan. They have a strong idea but a limited understanding of building a startup. This program aims at helping the innovation driven startups in their cocoon stage to convert their invalidated business ideas into a feasible and profitable business proposition. Under this, the startups in their ideation stage with no MVP and customer segment but a proof of concept would be guided to form a team, build a sustainable business model and learn nuances of market and entrepreneurship.

Discover

The team is built, the customers are there, and the money is coming too but is it enough to rev up your success? The raw material of innovation has to be converted into real-world breakthrough success. And this is where this 'Discover Program' helps you. This program, in particular, is designed for the startups in their 'caterpillar stage' to steer them in the right direction by making them aware of the process to turn the product insights into a great company. This diligently prepared incubation program would assist them in catalysing their growth and upscaling their limited customer base by adopting an outlier's approach towards the culture of entrepreneurship. In this, the startups will learn to leverage technology to drive their innovation to the real-world market, customer acquisition and revenue generation. The training sessions focused on business operations by seasoned professionals will facilitate them in engineering their startup success by following the right process.

Growth

This program targets the segments of startups with sound customer base and revenue in hand but not enough market visibility. With a team built successfully, this program will categorically help the startups to earn the market exposure on a wider scale & seek different channels to market their products. This will help in improving the success rate of their innovative products. The quality mentorship by the adept professionals of the industry would help them in acing different verticals of the market so that their venture lives up to its potential and does not fail in the long run. This is the stage where our support would take their back.

I4 LAB [INNOVATION INTEGRATION INCUBATION AND IMPLEMENTATION]

Rapid Prototyping

A rapid prototyping lab weighs much importance when it comes to product development. AIC-RNTU has the well-furnished rapid prototyping lab equipped with the latest technology to help the startups create a high-quality scale model of their product at lower costs. A shared Rapid Prototyping lab ensures speedy process and efficient management of the available resources.

Fabrication

Dedicated to the facility of digital fabrication, a well-furnished fab lab with all the modern equipment comes up with AIC-RNTU. It renders assistance to the product focused startups with a bunch of flexible technology, industrial-grade fabrication and computer-controlled tools to carry out their research with ease. The benefit of a fab lab lies in its ability to be tailored according to the specific needs of the startups.

Internet of Things (IoT)

A highly developed IoT lab dons our Incubation Centre for the startups driven toward advanced technical research and innovation. It is basically a large scale research platform for exploiting the potential of the Internet of Things to translate innovative ideas into material products. Our sophisticated lab is suitable for carrying out the deployment and testing of small wireless sensor devices and communicating objects.

"Learn while Innovating or Innovate while Learning"

A random idea might lose its track if it is not nurtured regularly in the right way. For a large number of people venturing into the culture of entrepreneurship nowadays, it is very important to educate and support them for the proper growth of their ideas. At AIC-RNTU, we have taken the charge of providing essential services such as fund support, management, mentorship, co-working space, and state-of-the-art technical assistance to the budding business units. And providing a platform to students, entrepreneurs,

professionals to fabricate the samples, build a prototype in our lab with their ideas. And assistance throughout the way by our team. By playing the role of both startup incubator and accelerator, we aim at training and mentoring young people to fuel their inner drive to innovate. Our primary objective here is to create a startup ecosystem and familiarize the visionary brains with the business aspects of an idea and provide them with a platform with necessary resources – culture, opportunities, and amenities – to grow their startup units into business enterprises.



RESOURCES IN AIC

3D Printer

3d printer can print solid 3D models which are simple or complicated ranging from toys to bearings, machine parts, replacements of broken article, casing and variety of other things. 3D printer helps turn concepts and ideas into physical prototypes saving time, reducing costs and shortening product development life cycles.

LASER Machine

This machine are used for engraving and cutting on wooden material, acrylic and other soft materials.

CNC Router Machine

This CNC Router machine can engrave the 3D & 2D design on wood,

plywood, MDF board and Acrylic also. Its working precision is very high.

MINI 3D Printer

This printer is Digital Light Processing (DLP) type. Its output is very precise than other type of 3D Printer. It can design very complex model quickly and easily.

Mini CNC Machine

As a small milling machine, that offers compact size and powerful functionality. Production of realistic parts and prototypes is made simple. For users looking for advanced milling capabilities without the need for expert operating skills, this is one of the easiest and most precise CNC mills in its class.

Vinyl Cutter

It is a type of computer-controlled machine. The computer controls the movement of a sharp blade over the surface of the material. This blade is used to cut out shapes and letters from sheets of thin self-adhesive plastic (vinyl). It is used to make signs, banners and advertisements. Advertisements seen on automobiles and vans are often made with vinyl cut letters.

3D Scanner

This 3D Scanner can scan real objects for 3D printing. The lightweight, ergonomic design makes it portable and easy to use for larger objects. It can produce portable as well as high-accuracy scans.















STARTUP ASSOCIATED





5 RESEARCH RESOURCES

THE NATURE OF RESEARCH

University research primarily emphasizes experimental investigations over theoretical concepts, as experimental research is often regarded as more practical and reliable. This focus on practicality highlights the importance of producing tangible outcomes and real-world solutions.

Beyond academia, research is an integral part of daily life. Whether making significant decisions like purchasing a car, selecting a book, or choosing a job, school, or college, individuals engage in continuous research. This process involves gathering information, analyzing options, and evaluating data to make informed choices. The universal nature of research underscores its vital role in both academic discovery and everyday decision-making, ensuring optimal outcomes across various aspects of life.

Research plays a crucial role in expanding knowledge and developing critical skills. Key aspects of research include investigating and understanding new information, forming informed opinions based on findings, engaging in discussions with scholars, and effectively utilizing primary and secondary sources. Through research, individuals gain a broader foundation for thinking and writing, allowing them to develop expertise beyond their daily experiences. The process cultivates essential skills such as critical questioning, data collection and interpretation, analytical reading, and evaluating conflicting evidence. By mastering these skills, researchers not only become experts in their chosen fields but also enhance their ability to make well-informed decisions in various aspects of life. Moreover, documenting and sharing research findings fosters credibility and encourages intellectual discourse, further contributing to knowledge advancement.



MAJOR RESEARCH FACILITIES AT RABINDRANATH TAGORE UNIVERSITY

CIVIL ENGINEERING

- Los Angels Abrasion Testing Machine
- Marshall Stability Testing Machine
- Ductility Testing Machine
- Benkelman Beam Appratus
- Flexural testing machine
- Conctere mixers
- Compaction Factor Testing Appratus
- Compression Testing Machine

- Briquette Testing Machine
- Aggregate Crushing Test Apparatus
- Aggregate Impact testing Machine
- Rebound Hammer
- Casagrandes Appratus
- CBR Testing App (Electrically)
- Modified Proctor test (Heavy Compaction)
- Permeability test falling head



MECHANICAL ENGINEERING

- Variable compression Ratio Engine
- CNC Machine
- Lathe machines
- Drilling Machines

- Milling Machine
- Refrigeration Units
- Compressors
- Softwares



- Solar Thermal Test setup
- Wind Research Test setup
- Solar PV Research System
- Spectrum Analyzer
- Digital storage oscilloscope
- Variable DC Power Supply
- Function GeneratorLux-Meter



ENERGY SCIENCE

- Complete PCB Design & Fabrication Lab
- Lab view 2017
- MATLAB 2017
- Scilab 6.0.0
- Novarm Diptrace 3.1.0.1
- Keil Microvision 4.0

- Arduino 1.8.3
- AVR Studio 4.0
- Designsoft TINA Pro V.9
- Xilinx ISE 14.1

- Ansys 15.0
- CATIA (2018)
- Mentor Graphics Model Sim 10





AGRICULTURE SCIENCE

- Automatic seed/grain counter
- Seed Moisture Meter (digital)
- Bather & Chillers 32 liter
- Sterilizer & Washes
- EC Meter
- Autoclave Vertical 22 liter double wall
- Grinder
- Automatic Filtration
- Calcimeter
- Screw Auger
- Post Hole Auger
- Counting boards
- Florescense Microscope 40x1000
- Grauated Measuring cylinder 1000 ml.
- High speed Refrigerator centrifuge 20000 RPM
- Plant Breeding kit
- Oil eneulson kit
- Shaker and vortex
- Sterilizer and washer
- Vertical gel electrophoresis unit
- Heater
- Incubator
- Spriat lamp
- Colouycaruter
- Cutture tube
- Compound Micros cope

- Balance PGB630
- Automatic filtration
- Dessicutor 210mm.
- Burette stand
- Mechanical shaker
- Precision balance pgb 220
- Rotary evaporator
- Soil moisture meter
- Shaking machine 18x18
- Catheter
- Milk pippets
- Termereic paper strip dozen
- Wood file
- Dissecting microscope
- Seed Counter
- Weighing Balance TTB 30
- Refrectometer
- Innoculatiuon Loop
- Electrical Conductivity Meter
- Water Testing kit
- wind wane
- Single distillation Unit
- Tensiometer
- Hot plate stirrer
- Flame Photometer
- Seed Germinator- 308 liter capacity

DEPARTMENT OF AGRICULTURE SCIENCE

W.

TAGORE UNIVERSITY

20

CHEMISTRY

- Rectangular Muffle Furnace
- Oven Universal
- Magnetic Stirrer
- Heating Mantle
- Ultra Violet Cabinet
- Electronic Digital L.E.D./ I.C.D. Display top pan
- High Temperature Tubular Furnace

- Spectrometer (Ocean Optics)
- Software. It is attached with High Temperature
- Rota Mantle
- PT 100 sensor hot plate
- Vertical Muffle Furnace
- Double distillation set up



- Net Sim
- Sim-2
- Weka
- Gephi
- Python
- Sci Lab
- Cloud Sim
- Lab view XILINXIE3D
- Mentor Graphics
- SPSS

- Computer System (35) in research lab
- R, Language Open Source
- Python Open Source/Anaconda

CENTRAL SOFTWARE RESEARCH LAB

- MATLAB
- Weka, Quantminer, Rapidminer







MAJOR RESEARCH FACILITIES AT DR C.V RAMAN UNIVERSITY (C.G.)

ENVIRONMENTAL SCIENCE

- Digital Flam Photometer (Besto) Besto/BLT
- Atomic Absorption Spectrophotometer sys-WFX-320
- Flame Photometer SYS-128
- B.O.D. IncubatorBes
- Conductivity Meters
- UV-vis. Double Beam Spectrophotometer sys-2205
- UV-vis. Single Beam Spectrophotometer Sys-118
- Turbidity Meter Sys-135
- C.o.d. Digester Besto/7945
- Auto Karl Fischer Titrimeter Ti-381
- Photoelectric Calorimeter Sys-113
- Soil Testing Kit
- Water Analysis Kit Sys-371
- Kjeldal Apparatus Insif
- Sohxlet Apparatus Borosilicate
- Tlc Apparatus Besto/tlc-37/7550
- Analytical Balance Hst
- Colorimeter Sys-115

- Water Deionizer Waston-50
- Digital Balance Citizen/CY-220
- Vortex Shaker 15WIXJR
- pH Meter MK VI
- Incubator
- Hot air oven CIC
- Autoclave 8192B
- Electrophoresis DPS2003
- Laminar air Flow 4FPTC
- Plant Growth Chamber Th7004
- Digital weighing Balance K ROY
- HPL, CSYS-LC-138
- PCR Thermal cycle T-100(Miorel)
- Distillation Unit
- Microtome BMT-6
- Turbidity meter Sys -135
- Paper chromatography SBCG2





CENTRAL SOFTWARE RESEARCH LAB

- MATLAB 11a
- Internet of Thing (IoT) Kit
- SCI Lab



- Weka
- Latex
- Python



22

6 FOOD PROCESSING UNIT

Agriculture and Food Processing, Business Incubation and Training Centre (AFBITC)

At AFBITC, we are dedicated to transforming the agricultural and food processing landscape. Our mission goes beyond supporting innovative ideas — we strive to cultivate practical solutions that empower businesses, uplift local communities, and promote sustainability in the food industry. Through our commitment to Innovation, Transformation, and Sustainability, we provide handson support at every stage of your entrepreneurial journey, from concept development to business growth.



Our Theme: "From Farm to Fortune, We Guide the Way"

Your journey from farm to fortune begins with a spark of innovation. At AFBITC, we bridge the divide between traditional agriculture and modern food processing, helping startups, farmers, and entrepreneurs realize the full potential of their products. Whether you are an aspiring entrepreneur with a groundbreaking idea or an established organization seeking transformation, our center offers the resources, expertise, and guidance you need to grow sustainably and succeed.

Key Areas of Focus:

1. Food Industry Excellence:

At AFBITC, we stand as a beacon of excellence in the food processing sector. Our comprehensive approach is designed to help you navigate the industry's complexities with confidence. We offer a complete suite of services to support your

growth, including:

- Product Innovation
- Technology Integration
- Research and Development (R&D)
- Marketing and Branding
- Sustainable Practices



With a strong focus on quality and sustainability, we leverage cutting-edge technologies and advanced R&D to enhance food products and drive industry progress. Partner with us to transform your ideas into impactful solutions.

2. Empowering Entrepreneurs in Agriculture and Food Processing

Launching and growing a business in the agricultural and food industry demands both knowledge and resources. At AFBITC, we offer comprehensive entrepreneurial support to help you navigate every stage of your startup journey. From securing licenses and setting up your business to accessing funding and valuable networking opportunities, we provide the essential tools and guidance you need to establish and scale your venture with confidence.

3. Supporting Farmer Producer Organizations (FPOs)

At AFBITC, we work closely with Farmer Producer Organizations (FPOs) to enhance the value of their agricultural produce. From extending the shelf life of fruits and vegetables to improving the quality of processed food products, our expertise helps FPOs maximize profitability and sustainability. By adding value at every stage, we empower farmers to access better market opportunities and build resilient, thriving agricultural enterprises.

Specialized Sections at AFBITC

At AFBITC, we offer four dedicated sections designed to support businesses and entrepreneurs in refining their skills, driving innovation, and expanding their product portfolios. Each section provides hands-on training, expert guidance, and access to state-of-the-art facilities for product development and scaling.

1. Bakery and Pasta Section: Master the craft of baking and pasta production with our advanced facilities. We provide comprehensive training in producing high-quality baked goods and pasta, supporting entrepreneurs in recipe development and commercial-scale production. Our focus on product innovation ensures your creations stand out in the competitive food market.

2. Fruit and Vegetable Processing Section: Transform perishable produce into value-added products like jams, juices, and dried fruits. This section offers specialized training in food preservation and processing techniques, empowering entrepreneurs to extend product shelf life and boost market appeal. It serves as an ideal incubation hub for those looking to scale their operations.

3. Micro Unit Processing Section: Designed for small-scale food processors, this section provides a controlled environment for experimenting with various processing techniques. Entrepreneurs can refine their products, optimize production processes, and introduce innovative offerings to the market with confidence.

4. Cold Storage Section: Proper storage is critical in maintaining food quality and reducing waste. Our Cold Storage Section ensures optimal temperature management for perishable products, extending shelf life and minimizing spoilage. This facility supports sustainable practices while enhancing product viability for both small and large-scale producers.

Services We Offer:

Comprehensive Business Support at AFBITC

At AFBITC, we are dedicated to empowering entrepreneurs by offering end-to-end support at every stage of your business journey. Our tailored services ensure you have the resources, guidance, and expertise to succeed in the agricultural and food processing sectors.

1. Entrepreneurial Support: Whether you're launching a startup or growing an existing business, we provide expert advice on business model development, funding options, and navigating legal and regulatory requirements.

2. Research and Development (R&D): Innovation drives progress. Our R&D support helps you refine your products, experiment with new formulations, and stay ahead of evolving market trends.

3. Technology Integration: Gain a competitive edge with cutting-edge food processing, packaging, and marketing technologies. We equip entrepreneurs with the latest tools to optimize operations and boost productivity.

4. Training Facilities: Participate in hands-on training programs and workshops covering food processing, entrepreneurship, and sustainable practices. Our training is customized to enhance both technical and business skills.

5. Capacity Building: Strengthen your skills and knowledge through continuous learning. AFBITC offers mentorship, skill development programs, and strategic support to build resilient, scalable businesses.

6. Product Innovation: From concept to commercialization, we assist in developing innovative products that align with market demands. Our expertise ensures quality and sustainability remain at the core of your offerings.

7. Market Access: We help you expand your market presence by connecting you with retail partners, export opportunities, and direct-to-consumer channels. Our support ensures your products reach the right audience.

8. Licensing and Business Incubation: Navigating regulatory processes can be complex. We simplify licensing procedures and offer incubation services, providing infrastructure, mentorship, and resources to accelerate your growth.



9. Sustainable Practices: Sustainability is integral to our mission. We promote eco-friendly methods, waste reduction strategies, and responsible sourcing to foster long-term growth while protecting the environment.

10. Networking Opportunities: Leverage our extensive AISECT network to connect with industry leaders, investors, suppliers, and partners. Our platform facilitates collaboration and opens new avenues for growth and innovation.

At AFBITC, we are your committed partner in turning agricultural and food business ideas into successful, sustainable ventures.



Why Choose AFBITC? Your All-in-One Solution

- End-to-End Support: From concept development to product commercialization, we provide comprehensive solutions tailored to your business needs.
- Practical Training: Acquire hands-on experience through our immersive training programs designed to build essential skills.
- Sustainability Commitment: Develop a profitable, responsible, and eco-friendly business with our focus on sustainable practices.
- Entrepreneurial Empowerment: Access expert guidance, resources, and valuable networks that accelerate your entrepreneurial growth.
- Innovation at the Core: Stay ahead in the food industry with our commitment to fostering innovation and integrating the latest technologies.

7 RESEARCH PROJECTS

ROLE OF AGU IN INTERNAL & EXTERNAL RESEARCH PROJECTS

The AISECT Group of Universities (AGU) actively promotes research, innovation, and technological advancements through internal and external projects. As a leading education and research group in India, it focuses on multidisciplinary fields like engineering, agriculture, management, environmental science, and artificial intelligence. By fostering interdisciplinary research, industry collaborations, and technology-driven solutions, AISECT drives academic excellence and real-world impact, contributing to India's socio-economic development while preparing students for a future-ready world.

INTERNAL RESEARCH PROJECTS

AISECT encourages internal research by providing resources, funding, and infrastructure to faculty and students.

Key Contributions:

- In-House R&D Centers: AISECT has established research and innovation labs to support internal projects.
- University-Funded Research Grants: Faculty and students receive funding to conduct independent research aligned with national and global challenges.
- Skill Development & Training: AISECT organizes workshops, conferences, and training programs to enhance research capabilities.
- Publication & Patent Support: The university assists researchers in publishing papers in reputed journals and filing patents for innovative ideas.
- Technology-Driven Research: AISECT integrates AI, IoT, and sustainable technologies into research for real-world problem-solving.

To develop Bio-Enzymes based products from waste material to replace chemical-based cleaning materials being used in the University and undertake research, testing and certification of entire range of Bio-Enzymes based chemical free materials used in day-to-day life

Amit Kumar Patel

Assistant Professor, Department of Agriculture, Dr. CV Raman University, Vaishali, Bihar.

This project aims to create sustainable and environmentally friendly cleaning solutions.

- Bio-Enzyme Production: It involves developing bio- enzymes from waste materia effectively turning waste into a valuable resource.
- Replacement of Chemical Cleaners: The goal is to replace conventional chemical-bas cleaning products with bio-enzyme-based alternatives, particularly within the univers
- Research, Testing, and Certification: The project includes rigorous research, testing, a
 certification of the bio-enzyme products to ensure their effectiveness and safety.
- Broader Application: The intent is to extend the use of these bio-enzyme produ beyond the university for general use in daily life.
- In short, this is a project designed to produce environmentally safe cleaning products



27



Sustainable Socio-Economic Development of Tribals and Farmers through Agricultural and Horticultural Crops Using Natural Farming Systems and Soil Organic Amendment Technology

Dr. Arvind Kumar

Associate Professor & Dean (Principal Investigator), AISECT University, Hazaribagh Dr. S. P. Vishwakarma

Assistant Professor (Co-Principal Investigator),), AISECT University, Hazaribagh

Preparation of Panchagavya: Comprises Panchagavya, Vermiwash, Compost Tea, Matka Khad, Beejmirit, Jeevamrit and Amrutpani.



Effect of different sources of farm yard manure, Jeevamrutha and panchgavya on growth and yield of French bean (Phaseolus vulgaris L) var. Paulista.



Impact of FYM, Jeevamaruth, Beejamruth and Neem Cake on soil microbial during potato (Solanum tubersum L.) cultivation.

3

Novel approach to decrease calcium oxalate in Taro (*Colocasia esculenta L.*) flour processing as intermediary product

Dr. Ganesh Malgaya

Professor, Department of Agriculture, Dr. C. V. Raman University Khandwa

To invent the procedure of flour making from taro roots and invent systematic process of quantitative estimation of calcium oxalate by titration method in taro flour.

Arbi is called Taro Root or Colocasia in English. *Colocasia esculenta(L.)* Schott commonly known as taro is an emergent, semi-perennial, aquatic, and semi-aquatic stem-less herbaceous plant cultivated for its starchy corms.

To reduce the anti-nutritional factors of taro corm chips such as soluble oxalate and phytic acid, it should be soaked in calcium salts solutions. The presence of oxalates in food is considered harmful to health because of the negative effects it has on the consumer intake. Soluble oxalates bind with minerals such as K+, and Na+ rendering them unabsorbed through the intestinal wall into the



bloodstream. The safe limit to the consumption of calcium oxalate for adults was 0.60-1.25 g per day for 6 consecutive weeks. Oxalate is a natural compound found in a variety of plant foods. There are two forms of oxalate in plants which are soluble and insoluble. In soluble form, oxalate is often found as a sodium salt. Soluble oxalate can be absorbed directly from food.





Escalating methanization in old conventional biogas units and developing the supply chain of Kamdhenu Natural Gas.

Dr. Seema Sharma

Professor, Research Cell, Dr. C. V. Raman University, Khandwa

The objective of this research is to enhance methanization process, biogas production efficiency, develop a portable biogas storage system, and promote a scalable Kamdhenu Natural Gas model for rural energy security. This research focuses on enhancing the methanization process in biogas production. The research explored the potential of using the slurry of a specific plant, Besharam (Ipomoea carnea), in combination with cow dung to increase biogas production.

The conclusion drawn from this research is that the use of Besharam (Ipomoea carnea) leaves and Parthenium hysterophorus (Gajar Ghas) slurry in biogas plants can lead to efficient biogas production with minimal cow dung requirements. This can potentially address the future energy demands and mitigate the scarcity of energy resources.





A Slider Crank Mechanism

Dr. Dinesh Kumar Soni

Professor & Coordinator, Core Research & Innovation Group, AISECT Group of Universities

In the invented mechanism, the piston covers ends (stroke) by taking only 90° rotation of the crank, as comparable to mechanism available in market, the piston covers ends of the cylinder by taking 180° rotation of crank. This mechanism will produce double work in single rotation of crank due to stroke achievement in 90° rotation of the crank. In this mechanism, once the crank is rotated, the piston moves 2 times in up direction, with



the help of which we will complete the work in less time than the conventional slider crank mechanism. For example, if an air compressor will take 1 hour to fill a tank, then this mechanism will take 30 - 40 minutes to fill the tank. Thus, it saves time and electricity consumption of the customer.

Development of Microbial Bio-Formulation against Fusarium wilt

Dr. Kusum Sharma

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Department of Life Science, Rabindranath Tagore University, Raisen (MP)

This project focuses on identifying and utilizing antagonistic microorganisms to combat Fusarium wilt in tomatoes. In this study, a total of 50 microbial strains were screened for their potential antagonistic activity against Fusarium oxysporum. The screening process involved evaluating the ability of each isolate to inhibit the growth of Fusarium oxysporum using a dual-culture assay. Among the 50 microbial isolates, four strains were identified to exhibit significant antagonistic effects, showing strong inhibition of Fusarium oxysporum growth. These four strains were further characterized for their ability to survive in saline conditions, as many agricultural regions face soil salinity issues that can limit the effectiveness of biocontrol agents. The selected microbial strains were tested for their survival and antagonistic potential in media containing 8% NaCl. Remarkably, these strains demonstrated the ability to thrive and maintain their antagonistic properties even in high salinity environments, which is critical for their use in agricultural areas affected by saline soils.



Fig. 1. Serial dilution technique

Fig. 2 Dual culture method.

Concept Note on Arbi (Colocasia esculenta) waste used as an alternative raw material for handmade papermaking.

Mr. Satish Patel

Assistant Professor, Rural Technology, Dr. C. V. Raman University Khandwa

Paper is a crucial component of society. Globally, approximately 195 million metric tons of pulp for paper is produced annually, with a significant portion derived from wood pulp. The escalating demand for paper, coupled with limited wood resources in India, presents significant challenges. India's paper industry ranks among the largest globally, accounting for about 5% of the world paper production. On average, producing one ton of paper requires between 1.5 to 2.5 of wood, leading to the felling of numerous trees. The exact number of trees needed varies based on species and size.



Handmade paper production from agricultural waste presents a promising solution, offering both ecological benefits and economic opportunities. One such underutilized resource is the waste material from Colocasia esculenta, commonly known as taro (Arbi) in India. Colocasia esculenta is widely cultivated for its edible corms, but its stems and leaves are often discarded as agricultural waste. For instance, research has been conducted on producing decorative paper from taro stems and leaves, highlighting the feasibility of utilizing these materials in paper making processes.



8

Azolla Production and Quality Techniques

Dr. Mukesh Kumar Dhaked

Assistant Professor, Department of Plant Pathology, Faculty of Agriculture, RNTU, Raisen (M. P.)

The primary objectives of this project are centered around the development and implementation of Azolla-based cultivation and application methods as a sustainable substitute for chemical fertilizers, aimed at enhancing soil fertility. Additionally, the project seeks to assess Azolla's viability as a nutritious and economical feed option that contributes to the health and productivity of livestock. A further goal is to reduce the financial burden on farmers by providing a cost-effective fertilizer solution.

The expected results of this initiative are set to create a standard for the use of bio-fertilizers and plantbased feeds in agricultural practices, which could lead to notable improvements in soil management, livestock health, and environmental sustainability. By establishing a sustainable and accessible framework for the integration of Azolla, this research has the potential to make a significant impact on global agricultural systems, improve farmers' livelihoods, and foster a healthier ecosystem, thereby aiding both immediate and long-term sustainable development objectives.



Real Time Face Recognition Based Attendance System and Students Behavior

Dr. Ravi Shankar Sharma

Department of Computer Science & IT, Rabindranath Tagore University, Raisen

Our innovative face recognition-based attendance system leverages cutting-edge computer vision techniques to enhance educational institutions' efficiency and improve classroom management. This system combines real-time face recognition for seamless attendance tracking with behavior analysis to provide insights into student engagement and participation.
Key Features

- 1. Automated Attendance Marking
- 2. Attendance Capture
- 3. Behavior Analysis Module
- 4. Behavior Analysis
- 5. User Interface
- 6. Reporting: Benefits
- 7. Data Security
- 8. Time Efficiency
- 9. Face Registration
- 10.Accuracy Improved Engagement



Calcium Oxalate-Depleted Taro Flour as a Natural Improver for PDS Flour.



Mr. Sandesh Daftari

Department of Pharmacy, Dr. C. V. Raman University Khandwa

This research aims to enhance Public Distribution System (PDS) wheat flour by incorporatingCalcium Oxalate-Depleted Taro Flour (COD-TF). Taro (Colocasia esculenta) is a nutrient-rich tuber, but its high calcium oxalate content limits its usability due to antinutritional effects. The project focuses on removing calcium oxalate and blending the improved taro flour with staple flour to enhance its nutritional value, functional properties, and sensory.





Design and analysis of piezoelectric energy harvester for Bicycle

Dr. Tejkaran Narolia,

Associate Professor, Department of Mechanical Engineering, Rabindranath Tagore University, Raisen **Dr. T. Ravi Kiran**

Professor, Department of Mechanical Engineering, Rabindranath Tagore University, Raisen

The primary objective of this project is to design a piezoelectric energy harvesting system for a bicycle, analyze its energy output potential, and demonstrate its feasibility for powering auxiliary electronic components.





This includes:

- 1. Selecting appropriate piezoelectric materials.
- 2. Designing a system that integrates the piezoelectric elements into a bicycle.
- 3. Analyzing the mechanical vibrations during cycling.
- 4. Estimating the electrical energy harvested from the system.



Solar Powered Velomobile

Dr. Tejkaran Narolia,

Associate Professor, Department of Mechanical Engineering, Rabindranath Tagore University, Raisen **Dr. T. Ravi Kiran**

Professor, Department of Mechanical Engineering, Rabindranath Tagore University, Raisen

Amid rising urbanization and environmental challenges, the demand for sustainable transportation is growing. A solar-powered velomobile, designed for personal mobility, merges the efficiency of a bicycle with the comfort of a car. This human-powered vehicle offers an innovative, eco-friendly alternative for urban commuting, combining pedaling with a protective, car-like shell.



Utility Patent (filed): 202521012871

Indigenous development of Polydopamine mediated and e-waste transformed bioinspired fluorine-free superhydrophobic coating with robust anti-corrosion property and durability

Dr. Sudeshna Ray and Ms. Shikha Vishwakarma

Advanced Materials Research Centre, Faculty of Science, Rabindranath Tagore University, Bhopal

One of the main challenges in developing superhydrophobic coatings for marine/automobile/petroleum industries is the optimization of mechanical durability, as the rough asperities required for maintaining superhydrophobicity tend to be easily removed by abrasion. To address this issue, this work reports the 'indigenous development' of superhydrophobic coating for metal surfaces with improved inherent mechanical durability and anti-corrosive property. Polydopamine (PDA) is a biomimetic mussel-inspired coating with the outer-exposed functional groups such as amine as well as hydroxyl groups and widely used in the field of surface modification due to its outstanding ability to form an adherent coating on a metallic surface.



Fig: Superhydrophobic cotton fabric and mild-steel substrates

33



Indigenous Development of 'Flame Retardant' coating formulations for fabric and wood

Dr. Sudeshna Ray, Dr. Prachi Tadge and Ms. Shikha Vishwakarma

Advanced Materials Research Centre, Faculty of Science, Rabindranath Tagore University, Bhopal

Flame retardants mitigate the threat of fire from inherently flammable materials responsible for sustaining a high standard of living. Although bulk flame retardants have proven effective for many years, there is now increased interest in the use of surface treatments to localize flame-retardant chemistry at the exterior of a material, where combustion occurs, in an effort to preserve desirable bulk properties and minimize the amount of additive needed. It is noteworthy to mention that fires in trains or stations can lead to catastrophic losses which leads to the application of fire retardant resin for slowing the spread of the fire for railway applications. Wood remained an integral part of building structures across the globe. Concerns have nonetheless arisen about wood having inherent high flammability and threatening the fire safety of buildings and inhabitants, leading to the need for enhancement of flame resistivity. The use of flame-retardants that possessed ease of application and cost-effectiveness to mitigate the threat of flammable wood is compelling in current development. In this modern era, the presence with flammable materials in our homes (curtains, carpets, decorations, plastics etc.), a typical room in a house can reach 600 °C in 3 minutes. However, 'Fire/Flame retardant fabrics' save lives and protect property by helping to prevent fires from starting and spreading. Fire retardant fabrics are usually used in industrial worker wears, uniforms for firefighters, military pilots' suit, war-combat dress, tent fabric, parachute fabric, professional motor racing apparel etc. It is mostly used in interior materials like curtains, in hotels, hospitals, theatres, etc. Materials like 'Twaron' are mostly used to withstand high temperature in industry like firefighting. The above mentioned applications substantiate the requirement of some indigenous 'flame retardant' and 'environmentally friendly' coating. In this work, we report the indigenous development of an improved 'flame retardant formulation' over known flame retardant formulations. The flame retardant formulation disclosed herein comprises a mixture of boron based acid and inorganic phosphate. The formulation is a non-toxic flame retardant lacking any halogenated compounds or additives is sufficiently effective to cut down the fire, when coated on the fabric as well as on the wood by 'Dip-coating'.



Fig. Uncoated and Flame Retardant Material Coated Wood and Fabric

EXTERNAL RESEARCH PROJECTS

AISECT actively collaborates with government bodies, industries, NGOs, and international universities to work on large-scale research projects.

Key Contributions:

- Government & Industry Collaborations: AISECT partners with DST, ICSSR, AICTE, ICAR, MSME, and private companies for sponsored research.
- International Research Partnerships: Collaborating with global institutions to enhance research in technology, education, and rural development.
- Startup & Incubation Support: AISECT promotes entrepreneurship through incubators that assist researchers in transforming ideas into businesses.
- Community-Centric Research: Conducting projects that benefit rural India, such as ICT-based learning solutions and renewable energy models.
- Participation in National & International Conferences: AISECT researchers present their findings in global forums, increasing visibility and impact.

S. No.	Name of the Faculty Member	Eol/ RFP/ Proposal's Name	Funding Agency	Funding Amount
1	Dr. Indu Sharma Dr. Sunil Kumar Dr. Sadhna Davneriya Dr. Ratnesh Pandey	Celebrating International Day of YOGA (IYD)	Indian Council of Philosophical Research Ministry of AYUSH	2,00,000
2	Dr. Rachna Chaturvedi	"Unveiling the silent Heroes: The role of social Entrepreneurs in shaping Viksit Bharat"	ICSSR	1,50,000
3	Dr. Rachna Chaturvedi	"Embarking on the Pursuit of Rigorous and Impactful Research: An Exploration of the Research Methodology Course for Ph.D. Scholars in Social Sciences "	ICSSR	5,50,000
4	Dr. Ratnesh Pandey	Celebration of International Day of Yoga	Indian Council of Philosophical Research Ministry of Education	40,000
5	Dr. Rachna Chaturvedi	Skilling: Prerequisite for EWS Students	SEED, DST	5,00,000
6	Dr. Sudeshna Ray	Crystal Engineering mediated development of spherical ammonium perchlorate of different sizes	DRDO HEMRL Ministry of Defence	49,61,429

Research Project Granted Rabindranath Tagore University, Bhopal

S. No.	Name of the Faculty Member	Eol/ RFP/ Proposal's Name	Funding Agency	Funding Amount
7	Dr. Preeti singh	"The Legacy of Sir P.C.Ray: Bridging Science and Society"	MPCST	18,000
8	Dr. Shalini Yadav	Assessment of Impact of Climate Change on Water Resource in Shipra River Basin	National Institute of Hydrology Central India Hydrology Regional Centre , Bhopal	66,07,050
9	Dr. Manisha Pandey	"Comparative study of Livelihood in Rural areas of Aspirational and Non-aspirational districts for encourage Effectiveness of Youth Venture Development."	ICSSR	20,00,000
10	Dr. Manisha Pandey	03 Days Workshop For C& D Ra ted FPOs	NABARD	1,99,000
11	Dr. Rachna Chaturvedi Dr. T. Ravi Kiran, Dr. Kishore	Scio - Economic Impact Assessment of Solar Energy Adoption in Tribal /Rural belt of Raisen District	ICSSR	11,00,000
12	Dr. Manisha Pandey	03 Days orientation program of the Board of Directors of Ratapani Mahila Farmer Producer Company	NABARD	36,000
13	Dr. Bhawna Agrawal	National Mathematics day 2024	MPCST	18,000
14	Dr. Preeti singh	National Workshop on Science Theme - Raman Effect	MPCST	18,000
15	AIC	Gen-Next Support for Innovative Starts -ups (GENESIS) Scheme	Ministry of Electronics and Information Technology Meity Startup Hub	9,80,000
16	AIC	FDP	Atal, AICTE	3,50,000
17	Dr. Ratnesh Pandey	Wellness Through Yoga & Naturopathy	IFFCO	20,000
18	Dr. Savitri Singh, Dr. Sanjay Dubey, Dr. Rachna Chaturvedi	"नर्मदा की सांस्कृतिक परंपराओं का लोक-पक्ष"	ICSSR	55,00,000
19	Dr. Kanak Saxena, Dr. Ashok Kumar Verma	Improved farming practices through EWD & zero tilage for sustainable agriculture in greenhouse gas mitigation in MP	MPCST	6,96,000
20	Dr. Savitri Singh	Dharmpal Swadeshi aur swaraj ki awdharana	Dharmpal Shodh Peeth	56,000

S. No.	Name of the Faculty Member	Eol/ RFP/ Proposal's Name	Funding Agency	Funding Amount
21	Dr. Manisha Pandey	DAIKIN Air Conditioners Installation and Maintainance Training Report	NABARD	5,65,000
22	Dr. Tej karan Naroliya & Dr. Rajender Gupta	Design and fabrication with mechanism for PZT energy harvester applied in fusing system of artillery gun bullet	MPCST	7,89,000
23	Dr. Purvee Bhardwaj	Workshop on Intellectual Property Right	MPCST	40,000
24	Dr. Neha Mathur	ATMANIRBHAR BHARAT: A Transformative Role for the New Education Policy in 2020	ICSSR	3,00,000
25	Dr. Neha Mathur	"Sustainable Development Goals and the G20 Agenda Progress and Challenges"	ICSSR	1,50,000
26	Dr. Prabal Roy	Science Awareness programmes in Tribal Schools of MP	MPCST	2,95,000
27	Dr. Manisha Pandey	One -Day Orientation Program For Associated Persons Of Farmers producer companies	Nevaj Aajeevika Mahila Kishan Producer Company Guna	50,000
28	Development of Pyrophoric Metal Ceramic Composite Materials for Smart Flair as IR Countermeasure	Armament Research Board, DRDO	3,295,000	Granted
29	AICTE (MODROB) for Refrigeration and Indoor Air Quality Lab (RIAQ)	AICTE	2,000,000	Granted
30	An assessment study of the commercialization of already developed technologies of the public funded research institutes established in Madhya pardesh and to eavaluate their relevance in synchrony to the technical requirement of the local industries	Department of Scientific and Industrial Research	655,000	Granted
31	Bhartiya Sanskriti evam sanchar parmaparay	Dharmpal Shodh Peetth	40,000	Granted

S. No.	Name of the Faculty Member	Eol/ RFP/ Proposal's Name	Funding Agency	Funding Amount
32	Indoor Quality Herbs Vegetable Production through Vertical/Geoponic Farming with the intervention of Nano Tech Phosphor Coneverted LED	MPCST	328,000	Granted
33	Women Empowermnet - Creating, Nurturing and Transforming the society	ICSSR	225,000	Granted
34	Dharmpal Swadeshi aur swaraj ki awdharana	Dharmpal Shodh Peetth	56,000	Granted

Research Project Granted Dr. CV Raman University, Bilaspur

S. No.	Name of the Faculty Member	EoI/ RFP/ Proposal's Name	Funding Agency	Funding Amount
1	Dr. Anupam Tiwari	"Entrepreneurship Development: A Tribal Perspective for a Skilled and Viksit Bharat"	ICSSR	1,50,000
2	Dr. Kajal Moitra	Beyond Boundaries Exploring Intersections in Social Science	ICSSR	1,50,000
3			Ministry of Education's Innovation Cell And AICTE	1,08,000
4	Mr. Ravikumar Tiwari	One day workshop on FabLab (3- D Printing ,Laser Cutting & Engraving , CNC Router)	IIT Ropar Technology and Innovation Foundation (iHub AWaDH)	1,00,000
5			iTBI Foundation	3,50,000
6	Dr. Ritesh Mishra	Birsa Munda: A Tribal Hero as a Champion of Gender Justice Sub- Themes: 1. Birsa Munda's Life and Legacy: Exploring his early life, struggles, and achievements as a tribal hero. 2. Challenging Socital Norms:Analyzing Birsa Munda's Efforts to Chall	(ICSSR)	3,00,000

S. No.	Name of the Faculty Member	EoI/ RFP/ Proposal's Name	Funding Agency	Funding Amount
7	Dr. Rachna Chaturvedi/ Dr. Satish Sahu	Tribal Development in Chhattisgarh: Shifting perspectives, Issues and Challenges	ICSSR	1,25,000
8	Dr. Kiran Tigga Dr. Vivek Bajpai, Dr. Anshul Shrivastava, Ravish Gupta	3-days Training Cum Workshop on Financial Literacy & Entrepreneurial Opportunities in Fintech	IIT Bhilai Innovation and Technology Foundation	250,000

Research Project Granted Dr. CV Raman University, Khandwa

S. No.	Name of the Faculty Member	Eol/ RFP/ Proposal's Name	Funding Agency	Funding Amount
1	Dr. Nikita Nagori, Dr. Seema Sharma, Mr. Umesh Sharma, Mr. Shivam Engla	Socio-Economic Impact of Solar Energy in Khandwa District	ICSSR	10,00,000
2	Dr. Rachna Chaturvedi/Dr. Preeti Shukla	Harnesing the potential of NEP 2020 in vocational Education	ICSSR	1,50,000

Research Project Granted

Dr. CV Raman University, Vishali, Bihar

S. No.	Name of the Faculty Member	Eol/ RFP/ Proposal's Name	Funding Agency	Funding Amount
1	Dr. Akanksha	Viksit Bharat: Igniting Youth Potential for Entrepreneurial	ICSSR	1,50,000
		Success		

Research Project Granted AISECT University, Hazaribag

S. No.	Name of the Faculty Member	EoI/ RFP/ Proposal's Name	Funding Agency	Funding Amount
1	Dr. Raj kumar	Fostering Entrepreneurship and Preserving Tribal Culture ('Atmanirbhar Bharat')	ICSSR	2,50,000
2	Dr. Smruti Ranjan Rath	Sustainable Development And CSR	ICSSR	1,40,000

Research Project Granted SCOPE Global Skills University, Bhopal

S. No.	Name of the Faculty Member	Eol/ RFP/ Proposal's Name	Funding Agency	Funding Amount
1	Dr. Teena Tiwari/ Dr. Rachna Chaturvedi	"Skill Development -Building a Future -Ready Workforce For Viksit Bharat"	ICSSR	1,50,000
2	Dr. Jyotsna Mishra	National Workshop on Science Theme - Raman Effect	MPCST	18,000
3	Dr. S. Veenadhari	R & D project, Machine learning approach to Predict the Effects of Agro -Climatic parameters Influences on Major Crop yields and Monitoring the Field level Data using Sensors	MPCST	5,00,000

Universities Research Projects - Granted









Research Projects Aligned with Sustainable Developments Goals

The infographic highlights AGU's commitment to impactful research by aligning its core research areas with the United Nations Sustainable Development Goals (SDGs). AGU's research ecosystem is designed to address pressing global challenges through innovation, sustainability, and real-world applications.

The seven key research domains contribute directly to multiple SDGs:

- **1. Sustainable Agriculture & Food Security:** Focuses on organic farming, climate-resilient crops, and soil health improvement to ensure food security and environmental sustainability (SDG 2, SDG 13, SDG 15).
- **2. Renewable Energy & Clean Technologies:** Explores solar energy solutions, biogas optimization, and energy-efficient transportation, promoting sustainable energy practices (SDG 7, SDG 9, SDG 13).
- **3. Environmental Sustainability & Climate Action:** Investigates water conservation, waste management, and climate change adaptation strategies, contributing to a greener planet (SDG 6, SDG 12, SDG 13).
- 4. Smart Infrastructure & Sustainable Cities: Develops technological innovations for smart cities, fire safety improvements, and urban planning, fostering resilient and sustainable urban ecosystems (SDG 9, SDG 11).
- 5. Socio-Economic Development & Entrepreneurship: Empowers tribal communities, promotes rural entrepreneurship, and enhances economic opportunities, aligning with poverty reduction and decent work initiatives (SDG 1, SDG 8, SDG 10).
- 6. Women Empowerment & Social Transformation: Champions gender equality and economic inclusion, fostering policies and projects that enhance women-led businesses and social equity (SDG 5, SDG 8).
- **7. Education & Skill Development:** Strengthens learning ecosystems through digital education, technical skills training, and capacity-building programs, preparing a future-ready workforce (SDG 4, SDG 8).

Through its multidisciplinary research initiatives, AGU ensures that scientific advancements translate into sustainable solutions, driving positive change across industries and communities. By aligning research efforts with SDGs, AGU aims to bridge the gap between academia, industry, and society, shaping a better and more sustainable future.



8 PATENTS

AGU PERSPECTIVE



AGU prioritizes quality research, leading to valuable patents that align with the nation's vision. Patentcentric research nurtures innovation and commercialization, benefiting society through practical solutions. AGU consistently files high-quality patents, with various departments actively contributing to innovation. These patents serve as key benchmarks for accreditation agencies, reflecting AGU's commitment to academic excellence. Each patent undergoes rigorous evaluation by CRIG, often receiving funding and legal support. To date, AGU has published over 100 patents, reinforcing its dedication to intellectual property protection and innovation.

Granted Patents

The AISECT Group of Universities (AGU) actively promotes research commercialization by transforming granted patents into market-ready products and technologies. With a strong focus on innovation and entrepreneurship, AGU collaborates with industries, startups, and government bodies to commercialize patented technologies for real-world applications.

AGU provides technical support, funding assistance, and incubation opportunities to help researchers and inventors bring their patented ideas to market through its research and innovation ecosystem. The university's Technology Transfer Center (TTC) facilitates industry partnerships, ensuring that granted patents contribute to economic growth and societal advancement.

AGU continues to drive patent commercialization, creating impactful solutions in fields like engineering, healthcare, agriculture, and sustainable technology by leveraging interdisciplinary research and development in industrial collaboration. This commitment strengthens India's innovation landscape, reinforcing AGU's role in bridging academia and industry.







42

GRANTED PATENTS

- An Improvement in DTH with Solar Energy Panel
- A Transformer Fault Detection Device
- A Novel Blue Color Emitting Phosphor Composition and A Process for the Preparation Thereof
- Intelligent Solar Street Pole
- A Multipurpose Solar Dryer
- A Slider Crank Mechanism
- A Crank Less I.C. Engine
- A heat recovery system use with an IC Engine



S.No	Name of Published Patents	Patent Number	University
1.	A Transformer Fault detection device	201721034866	RNTU, Bhopal
2.	A Novel System and Method for Automatic Attendance Marking	201721040690	RNTU, Bhopal
3.	Intelligent Solar Street Pole	201721040691	RNTU, Bhopal
4.	A Crank Less I.C. Engine	201721038460	RNTU, Bhopal
5.	A Novel Slider Crank Mechanism	201821035492	RNTU, Bhopal
6.	Fake Data Detection System and Method	201921035659	RNTU, Bhopal
7.	Optimal Path selection Method	201921035660	RNTU, Bhopal
8.	Education Management System and Method	201921035661	RNTU, Bhopal
9.	Waste Water Treatment System	201921035662	RNTU, Bhopal
10.	Concrete composition and a method of Preparation Reparation thereof	201921035663	RNTU, Bhopal
11.	Power Amplification System	201921035654	RNTU, Bhopal
12.	Up conservers ion Nanophosphor Based Photo electrode for Dye Sensitized Solar Cell and a Method of Making there of	201921035656	RNTU, Bhopal
13.	Harmonic detection and reduction system	201921035658	RNTU, Bhopal
14.	Bar Clamp	322260-001	RNTU, Bhopal
15.	Mouth Piece for Analysing Exhaled Breath	322254-001	RNTU, Bhopal
16.	Pneumatic Clutch Actuator	322262-001	RNTU, Bhopal
17.	Sheet Cutter	322255-001	RNTU, Bhopal
18.	Wood Cutting and Trimming Machine	322256-001	RNTU, Bhopal
19.	Frequency Converter	322258-001	RNTU, Bhopal
20.	Vacuum Cleaner	322253-001	RNTU, Bhopal
21.	Portable Charger	322257-001	RNTU, Bhopal
22.	Video Shot Transition Detection Method	201921049693	RNTU, Bhopal
23.	System and Method for constructive effort estimation	201921049688	RNTU, Bhopal
24.	Enhanced Biometric Based Digital Circulation of encrypted question Paper	202041040640	RNTU, Bhopal
25.	Artificial Intelligence Based Efficient Communication Platform Between Deaf & Blind and between Blind & Deaf	202021044631	RNTU, Bhopal
26.	A Heat Recovery System for Use with an IC Engine	202121041817	RNTU, Bhopal
27.	A Compact Mechanical System For Rescuing An Object	4637/MUM/2015	RNTU, Bhopal
28.	System And Method For Identifying Knuckles Of Users	201921049690	RNTU, Bhopal
29.	Iot Based Smart Surveillance Security System With Automatic Santization	202021044245	RNTU, Bhopal
30.	An Image Processing System Using Fixed Point And Fuzzy Logic Unit	202121029056	RNTU, Bhopal
31.	Advanced Fire Detection And Passenger Alerting System Based On lot For Indian Transportation (Railway) Sector	202141041003	RNTU, Bhopal
32.	Automatic Network Operation And Management To Improve Network Resource Utilization And Operational Reliability Using Machine Learning Algorithms	202141043198	RNTU, Bhopal
33.	In Silico Based Study To Predict And Analyse Drug Molecules For Targeting Cancerous Cells	202211010470	RNTU, Bhopal
34.	Multi-Purpose Hanger	339352-001	RNTU, Bhopal

35.	Smart Solar Wireless Charging System For Electric Vehicle And Its Alert	202221028078	RNTU, Bhopal
36.	An Adaptive Fuzzy Power Controller Based Wind Energy Conversion System	202221046890	RNTU, Bhopal
37.	Influence Of The Interconnection Of Wind Turbines Types I, II, III And Iv On The Parameters of The Hosting Capacity of Distribution Systems	202241050139	RNTU, Bhopal
38.	Smart Solar Grid Management System Based on IoT & Machine Learning	202221051815	RNTU, Bhopal
39.	Recommender System for Telecommunication Industry	202221050432	RNTU, Bhopal
40.	Energy Monitoring Meter	364212-001	RNTU, Bhopal
41.	Artificial Intelligence Powered Robot for Home Assistance	368825-001	RNTU, Bhopal
42.	The Efficient & User-Friendly Approach to File Income Tax Return In Transparent Manner	202321020766	RNTU, Bhopal
43.	Novel-Ni Based Alloy And Process For The Preparation Thereof	202221002412	RNTU, Bhopal
44.	A Panel Connectivity Structure in Assembling A Building and Manufacturing Method Thereof	202341064165	RNTU, Bhopal
45.	A High-Speed Resistance Device	202321026146	RNTU, Bhopal
46.	Energy Managing Device	393716-001	RNTU, Bhopal
47.	Parameter Dependent Analysis of Regression Supervised Machine Learning	202321036162	RNTU, Bhopal
48.	Grid Energy Management Device	397304-001	RNTU, Bhopal
49.	Machine Learning Based Robot for Monitoring Crop Yield	6327252(UK DESIGN)	RNTU, Bhopal
50.	Concept Note on Experiential Learning	993/2024-CO/L	RNTU, Bhopal
51.	Solar Tree Based Structure	201721002193	RNTU, Bhopal
52.	A Multipurpose solar Dryer	201721034865	RNTU, Bhopal
53.	Dual Axis Fault Resistant Solar Tracking Device	201721042400	RNTU, Bhopal
54.	Smart Solar Panel Cleaning Device	201721042401	RNTU, Bhopal
55.	Method for Routing in Vehicle AD-HOC Network (VANET) with Mobility Awareness	201821047991	RNTU, Bhopal
56.	Computer Implemented Method for Semantic Indexing Based Text Classification using Deep Learning	201911042141	RNTU, Bhopal
57.	System of Personalized Physical and Mental Monitoring with Using IOT Sensors Network	201911041380	RNTU, Bhopal
58.	Automatic transformer Maintenance System	201921035655	RNTU, Bhopal
59.	Hybrid Power Generation System	201921035657	RNTU, Bhopal
60.	Method for preparing Stone Matrix Asphalt	201921049692	RNTU, Bhopal
61.	Fog Collecting System	201921049689	RNTU, Bhopal
62.	System and Methods for identifying Knuckles for Users	201921049690	RNTU, Bhopal
63.	Prediction Device for Roughness Surface	201921049691	RNTU, Bhopal
64.	An IOT Enabled Cloud Computing Based Remote Monitoring System of Hazardous, Flammable, and Explosive Leakage for Chemical Industries	202041015822 A	RNTU, Bhopal

65.	A System for Electric Terrain Vehicle Dynamics Analysis & 202111036381 A RNT Optimization		RNTU, Bhopal
66.	An IoT & Cloud Computing Enabled 5G Sensor Network for 202111041401 Smart City Implements		RNTU, Bhopal
67.	An Afterglow Material For Cold Tracer and A Process for the 201721036125 Preparation on thereof		RNTU, Bhopal
68.	Highly Reliable Dual Axis Solar Tracking Device	201721042400	RNTU, Bhopal
69.	IPF- Voltage Converter Shoe: Intelligent Shoe Power Bank Charged by Foot Steps.	202021052201	RNTU, Bhopal
70.	An Improvement in DTH with Solar Energy Panel	2021101394	RNTU, Bhopal
71.	System For Detecting Profitable Segments of E-Commerce Platform	202021009793	RNTU, Bhopal
72.	A Civil Engineering Water System with Embedded Solar Panels	202121046610	RNTU, Bhopal
73.	Strategies for A Home Charging System for Electric Vehicles	202141048422	RNTU, Bhopal
74.	A System For Monitoring And Mapping of Plantation Cover using Different Global Positioning System	202121049706	RNTU, Bhopal
75.	 Effective And Compact Face Descriptor For Driver Drowsiness Detection Applied with Machine Learning and Visual Behavior 		RNTU, Bhopal
76.	An Intelligent Logistics And Supply Chain System A Novel Parallel Technique Construction over the Obstacle Rectilinear Steiner Tree Electronic Device for Aggregating Sources for Payment to Financial Transaction	202211007580	RNTU, Bhopal
77.	Machine Learning Based Technique To Analyse The Data Of Covid Patients and Chance for Getting Infected with other Variants	202241010381	RNTU, Bhopal
78.	Cost Effective Solar Panels With Photovoltaic Cells Coated With Nanoparticles	202221013684	RNTU, Bhopal
79.	Smart Nanotechnology Based Gas Sensors to Control the Inert Gases from Creating A Poisonous Environment	202211025380	RNTU, Bhopal
80.	 Ai Based Automatic Efficient Greenhouse Farming System to 202241029 Detect and Prevent all kinds of Plant Disease using Image Processing and Deep Learning Algorithms for Higher Crop Yield 		RNTU, Bhopal
81.	Artificial Intelligence And Machine Learning-Based Techniques to Improve the Detection of Lung Cancer	202221028961	RNTU, Bhopal
82.	Intelligent Power Control Mode for Double Fedinduction Generator Wind Turbine	202221042001 RNTU, Bhopal	
83.	A Methods and Apparatus for Multi-Source Converter Topology for Integration of Different Energy Sources	Methods and Apparatus for Multi-Source Converter 202221048072 RI	
84.	Analysis Of Diversity Of Plant Growth Promoting Properties of Microbiomes Associated with Plants in Desert Soils	202311012924	RNTU, Bhopal
85.	Device to Detect the Power Consumption of Renewable Energy	379161-001	RNTU, Bhopal
86.	IoT Controlled Charger for Electric Vehicles	379558-001	RNTU, Bhopal
87.	Artificial Intelligence and IoT Based Smart Agriculture Management System for Efficient Irrigation and Crop Monitorin using Machine Learning Algorithms	202311044154	RNTU, Bhopal

88.	Algae-Powered Street Lamps through Photosynthesis 385680-001 R		RNTU, Bhopal
89.	Implementation of Machine Learning Based Architecture for Detecting Diseases in Plant Leaves	202321037088	RNTU, Bhopal
90.	Crop Yield Production Depleting Classifier	202321034768	RNTU, Bhopal
91.	Sun Tracking Solar Panel System	6349212	RNTU, Bhopal
92.	Energy Grid Optimizer	408687-001	RNTU, Bhopal
93.	Variable Wind Speed Piezoelectric Energy Harvesting System	202421013552	RNTU, Bhopal
94.	A Surface Cleaning Apparatus	202421050049	RNTU, Bhopal
95.	Analysing the role of digital marketing in growth of e- commerce in India: a multiple holistic approach	202441037365	RNTU, Bhopal
96.	Targeted Drug Release Device for Enhanced Efficacy in Cancer Treatment	6383577	RNTU, Bhopal
97.	Solar Water Heater	427066-001	RNTU, Bhopal
98.	A Slider Crank Mechanism	201821035492	RNTU, Bhopal
99.	A Crank Less I.C. Engine	201721038460	RNTU, Bhopal
100.	Highly Reliable Dual Axis Solar Tracking Device	201721042400	RNTU, Bhopal
101.	Smart Solar Panel Cleaning Device	201721042401	RNTU, Bhopal
102.	System and Method for Harvesting Energy	202121001943	RNTU, Bhopal
103.	Phase Sequence Detection Device	201921026120	CVRU, Bilaspur
104.	Voice And Remote-Controlled Home Automation System	201921026118	CVRU, Bilaspur
105.	Automatic Temperature Based Fan Controlling System	201921026123	CVRU, Bilaspur
106.	Data Loss Prevention System and Method	201921026142	CVRU, Bilaspur
107.	Method for Removing Contaminants from Liquids Using Bio- Separation Technique	201921026144	CVRU, Bilaspur
108.	Method for Estimating Heavy Metals Contamination in Foodstuffs	201921026140	CVRU, Bilaspur
109.	Method for Determination of Heavy Metals Contamination	201921026143	CVRU, Bilaspur
110.	Method and Systems for Two-Wheeler Security	201921008522	CVRU, Bilaspur
111.	Water Filter for Aquarium	319204-001	CVRU, Bilaspur
112.	Fluid Dispensing Bottle	319205-001	CVRU, Bilaspur
113.	Chain Cover for Vehicle	319206-001	CVRU, Bilaspur
114.	Light Fixture	319207-001	CVRU, Bilaspur
115.	Air Pump	319209-001	CVRU, Bilaspur
116.	Public Light Fixture	319210-001	CVRU, Bilaspur
117.	Spark Plug Connector	319211-001	CVRU, Bilaspur
118.	Laser For Drilling	319194-001	CVRU, Bilaspur
119.	Liquid Sorting Machine	319195-001	CVRU, Bilaspur
120.	Hand Cart for Agriculture	319196-001	CVRU, Bilaspur
121.	Adapter	319188-001	CVRU, Bilaspur
122.	Heat Exchanger	319189-001	CVRU, Bilaspur
123.	Mouth Clooping Apparatus	210101 001	CVRU, Bilaspur
124.	Drill Chuck	310102 001	CVRU, Bilaspur
125.	Jack For Lifting	310716_001	CVRU Rilacour
120.	Device For Cutting Paper	319220-001	CVRU Rilaspur
12/.	Devicer of Cutting ruper	517220 001	

128.	Vending Machine	319221-001	CVRU, Bilaspur
129.	Finger Wearable Forceps	319218-001	CVRU, Bilaspur
130.	Chimney For Kitchen	319219-001	CVRU, Bilaspur
131.	Manual Roll Press Machine	319233-001	CVRU, Bilaspur
132.	Hand Juicer	319223-001	CVRU, Bilaspur
133.	Punching Machine for Paper	319224-001	CVRU, Bilaspur
134.	Air Tool Balance	319232-001	CVRU, Bilaspur
135.	Electric Wires Connector	319225-001	CVRU, Bilaspur
136.	Mincer	319227-001	CVRU, Bilaspur
137.	Pump Unit	319228-001	CVRU, Bilaspur
138.	Dispensing Brush	319229-001	CVRU, Bilaspur
139.	Lubricant Container	319230-001	CVRU, Bilaspur
140.	Filter Housing for Water Purifier	319208-001 CVRU, Bilaspur	
141.	Public Light Fixture	319210-001 CVRU, Bilaspu	
142.	Liquid Sorting Machine	319195-001	CVRU, Bilaspur
143.	Adapter	319188-001	CVRU, Bilaspur
144.	Hand Juicer	319223-001	CVRU, Bilaspur
145.	Locomotive Track Monitoring System	201921026121	CVRU, Bilaspur
146.	Green House Management System	201921026122	CVRU, Bilaspur
147.	Method for Estimating Micronutrients	201921026119	CVRU, Bilaspur
148.	System and Method for Controlling Multi-Media Displays	201921026138	CVRU, Bilaspur
149.	Computational System	201921026145	CVRU, Bilaspur
150.	Denoising System	201921026141	CVRU, Bilaspur
151.	Method for Synthesizing Graphene Nano-Platelets	201921026139	CVRU, Bilaspur
152.	Autonomous Motor Controlling System	201921026135	CVRU, Bilaspur
153.	Cancer Detection System and Method	201921026127	CVRU, Bilaspur
154.	Power Factor Correction System and Method	201921026130	CVRU, Bilaspur
155.	System And Method of analysing Vibration on Machines	201921026131	CVRU, Bilaspur
156.	Risk Assessment Method	201921026129	CVRU, Bilaspur
157.	Cognitive Radio System	201921026132	CVRU, Bilaspur
158.	Cordless Screw Driver	319203-001	CVRU, Bilaspur
159.	Filter Housing for Water Purifier	319208-001	CVRU, Bilaspur
160.	Hydraulic Pipe Cutter	319212-001	CVRU, Bilaspur
161.	Electric Transducer	319213-001	CVRU, Bilaspur
162.	Alternator	319214-001	CVRU, Bilaspur
163.	Robotic Arm	319197-001	CVRU, Bilaspur
164.	Gear Shifter Knob of a Vehicle	319198-001	CVRU, Bilaspur
165.	Fuel Burner for Testing	319222-001	CVRU, Bilaspur
166.	Grill for an Automobile	319217-001	CVRU, Bilaspur
167.	Suspension Assembly	319226-001	CVRU, Bilaspur
168.	Connector for Signal Transmission	319231-001	CVRU, Bilaspur
169.	Crime Detection and Prevention System Using Personal and Public IoT Networks	2020102101	CVRU, Bilaspur
170.	Method For Water Pollutant Concentration Estimation in Water Reservoir Using Laplace Transform	2020102450	CVRU, Bilaspur
171.	Green Building Environment Management Module for Real Time Air Quality Monitoring	2020102451	CVRU, Bilaspur

172.	Disease Detection Using IoT and Machine Learning in Rice Corps	CVRU, Bilaspur	
173.	An AI Based System for Glucose Monitoring and	2020142112	CVRU, Bilaspur
174.	Plastic waste collection system 64157		CVRU, Bilaspur
175.	Optimized quantum computing architecture for complex	202441044532 A	CVRU, Bilaspur
	optimization problems		
176.	Double distillation apparatus for extraction of natural products	426453-001	CVRU, Bilaspur
177.	Ai enabled device for detection of neurological disorders	418158-001	CVRU, Bilaspur
178.	Apparatus for developing polyherbal extracts	423160-001	CVRU, Bilaspur
179.	Solar operated grass cutter	425633-001	CVRU, Bilaspur
180.	Device for analysis of multifactor depression in rodents	395840-001	CVRU, Bilaspur
181.	Cationic microemulsion of voriconazole for the treatment of fungal keratitis	202441059536 A	CVRU, Bilaspur
182.	Portable device for detection of ketones from urine	392017-001	CVRU, Bilaspur
183.	Education Reform: A Major turning point form conventional to contemporary learning environment	202441 006515	CVRU, Bilaspur
184.	184.Column chromatography apparatus for isolation for416565-00phytochemical compounds416565-00		CVRU, Bilaspur
185.	Fluoride from water filtration device	404087-001	CVRU, Bilaspur
186.	Solar power sea water desalination apparatus	398703-001	CVRU, Bilaspur
187.	Analysis and study of Mathematical object-based approached used in machine learning, computer vision and artificial intelligence	202341073622	CVRU, Bilaspur
188.	Device for Sarcasm Detection in online Conversation Using Support Vector Machine	422305-001	CVRU, Bilaspur
189.	Wearable Emotion Dection Device with Inregated Sentiment Analysis for Real Time Monitoring of Mental Health	432310-001	CVRU, Bilaspur
190.	Ai based device for determining crop yield	426923-001	CVRU, Bilaspur
191.	Green digital library device to monitor book keeping	408548-001	CVRU, Bilaspur
192.	Portable device for production of bioethanol	412577-001	CVRU, Bilaspur
193.	Apparatus for developing polyherbal extracts	426453-001	CVRU, Bilaspur
194.	pH Meter for Evaluation pH Values ofr Liquids	430167-001	CVRU, Bilaspur
195.	 IOT Based Smart Surveillance Security with Automatic Sanitization. 		CVRU, Vaishali
196.	Enhanced Biometric based digital circulation of Encrypted 202041040640 CVRU question Paper.		CVRU, Vaishali
197.	IPF- Voltage Converter Shoe: Intelligent Shoe Power Bank charged by Foot Steps.	oe Power Bank 202021052201 CVRU, Vaishali	
198.	MODI	202011035844,	CVRU, Vaishali
199.	Multi Power Source AC thela	202011037949	CVRU, Vaishali
200.	Aqua fodder based hydroponic device40-51-97		CVRU, Vaishali
201.	Edible Mushroom growing device	419011-001	CVRU, Vaishali
202.	Portable insect detection device	420272-001	CVRU, Vaishali

203.	Portable insect detection device	L-152965/2024	CVRU, Vaishali
204.	Genetic seed enhancer machine	410932-001	CVRU, Vaishali
205.	Aherbal formulation for effective diabetes managemnt	202411015536A	CVRU, Vaishali
206.	Financial transaction authentication device	428735-001	CVRU, Vaishali
207.	Transport goods monetring device	427147-001	CVRU, Vaishali
208.	Portable computer tab	393644-01	CVRU, Vaishali
209.	Math fear detecting spectacle	403286-01	CVRU, Vaishali
210.	Metal nano particle synthesis Device	409673-001 CVRU, Vaishali	
211.	Algebraic graph analysing solar powered device	412247-001	CVRU, Vaishali
212.	Descrete Mathematics Problem	438360-001	CVRU, Vaishali
213.	ML Based Robot for determining crop yield	6353601	AU, HZB
214.	Automated water Fitration Device	437113001	AU, HZB
215.	Method For Producing Calcium Oxalate Reduced Taro Flour	202421103088 A	CVRU, Khandwa
	Using Optimized Soaking And Drying Techniques		
216.	Algebraic graph analyzer	425701-001	CVRU, Khandwa
217.	Algebraic graph analysing solar	412247-001	CVRU, Khandwa
210	powered device	6442272	
218.	Handheld Math Learning and Practice Device	6413372	CVRU, Khandwa
219.	Math fear defecting spectacle	403286-001	CVRU, Khandwa
220.	Portable Image Recognizing Computer Tab	394822-001 (INDIA)	SGSU, Bhopal
221.	Pneumatic Conveying Machine	403864-001 (INDIA)	SGSU, Bhopal
222.	22. Computational Device for Numerical Analysis 418466-001 (INDIA) S		SGSU, Bhopal
223.	Algebraic Graph Analyzer 42570		SGSU, Bhopal
224.	Handheld Math Learning and Practice Device	6413372 (IPO U K)	SGSU, Bhopal
225.	System and method for detecting the fraud in banking	202421078197	SGSU, Bhopal
	sector using machine learning model		
226.	AI-Based Analytical Platform for Enhancing Research Paper	202421079642A	SGSU, Bhopal
	Quality and Accuracy" Quality and Accuracy"	J.no 47	

9 RESEARCH PAPER PUBLICATION

PARAMETERS OF AGU

The AISECT Group of Universities (AGU) is deeply committed to advancing academic research through the publication of high-quality research papers in national and international journals. AGU encourages faculty members, researchers, and students to engage in multidisciplinary research, contributing to global knowledge across fields such as engineering, artificial intelligence, management, environmental science, agriculture, and social sciences.

AGU promotes publication in Scopus, Web of Science, and UGC CARE-listed journals to ensure research excellence. The university provides mentorship, funding support, and access to state-of-the-art research facilities, promoting a culture of innovation and scholarly contribution. Additionally, AGU organizes conferences, seminars, and workshops, enabling researchers to present their work and collaborate with experts worldwide. AGU enhances academic standards, industry relevance, and societal impact, reinforcing its role as a leading research-driven institution by consistently publishing high-impact research papers.





10 BOOK/BOOK CHAPTERS PUBLICATION

PARAMETERS OF AGU

AGU follows strict formatting guidelines to ensure clarity, readability, and professionalism in book writing. Proper formatting, including fonts, margins, spacing, alignment, and page structure, enhances engagement and maintains consistency. As part of its knowledge management process, AGU emphasizes knowledge sharing through books and book chapters, with faculty members authoring over 100 publications. These works serve as valuable resources for students, researchers, and organizations, fostering scholarly collaboration and contributing to academic and community development.









CONSULTANCY AT AGU 11

INTRODUCTION

AGU provides consultancy services across various fields for public and private sector organizations, offering expert guidance in Agriculture Science, Engineering & Technology, Humanities, Physical & Life Sciences, Economy, Management, Paramedical & Nursing, Library Science, Science Communication, and Yoga. With extensive research expertise, AGU's consultants collaborate with clients to develop tailored, efficient solutions that address specific challenges.



CONSULTANCY SERVICES

Consultancy skills & expertise as per nature of problems,

- Inventive thinking.
- Thinking conceptually and practically.
- Problem-solving.
- Communicating clearly and sympathetically.

STREAM WISE AREAS OF CONSULTANCY

- · Collaboration with all job levels.
- Organization and time management.
- Curiosity.
- Trustworthiness.

Agriculture, Farms, Crops and Food Processing Areas of consultancy

- Renewable Energy & Farm machinery
- Trainer- (Crop Insurance & Rural Finance) / Farmer Training / Inorganic & Organic farming Consultancy.
- Horticulture Science, Vegetable based kitchen garden/farming module, Greenhouse management, Organic farming
- Bee keeping, Insect Population dynamic and • Storage grain management
- Social work in Rural & Tribal area / Sociology
- Hindi Literature
- Indian Mythology & Feminism in English Literature, Soft skills & Personality development







53

Humanities, Arts and Languages

Areas of consultancy

- Social work in Rural & Tribal area / Sociology
- Hindi Literature
- Indian Mythology & Feminism in English Literature, Soft skills & Personality development



Physical, Science, Life Science, Biotechnology & Maths

Areas of consultancy

- Environmental Science / Parasitological / Potential of Medicinal Plants
- Advance Material Science/Nano Technology
- Environmental Science, Sustainability analysis & design
- Advance Material Science/Nano Technology
- Maths related topics



Civil Engineering

Areas of consultancy

- Wastewater Treatment, Industrial & Solid
 Waste Management
- Water resources and Environment and Geology
- Transportation



Computer Science Engineering Areas of consultancy

- IOT
- Data Mining / Machine Learning
- Machine Learning, Data analytics, Python



Mechanical Engineering

Areas of consultancy

- Energy and Emissions with regards to internal Combustion Engines.
- Renewable energy & Material Management
- Production Engineering
- I.C. Engine, Refrigeration & Air conditioning
- Fabrication, CNC, CAD/CAM
- Solar Energy, Refrigeration & Air Conditioning
- Material Science



Electrical Engineering

Areas of consultancy

- Control System
- Integrated Circuits & VLSI
- Energy Communication Systems



Electronics and Communication Engineering Areas of consultancy

- Wireless Communication, Sensor Networks
- Wireless communication, Digital Electronics
- Single Phase Electrical circuits (Electrician training)
- Digital Communication / Wireless
 Communication /Optical Communication



Information Technology Areas of consultancy

- Data mining / Graphic Designing /2 D Animation
- Information Technology



Paramedical, Nursing & Pharmacy

Areas of consultancy

- Specialization in Mental health Nursing
- Nursing
- Yoga & Nutrition Expert / Ayurved
- Physiotherapy / Dry needling / Cupping



Education

Areas of consultancy

 Psychology / Psychometric Test Research on Educational Issues /subjects



- Behavioural Trainer / Statistical Software
 Trainer/Taxation
- Statistical Software Trainer/Taxation/Stock Market
- Personality development/Communication Skills
- Career Counsellor







CONSULTANCY SERVICES OF SOME SPECIALIZED DEPARTMENTS

S.	Fields	Consultancy Services		
NO.	Agriculture			
1.	Agriculture	Customization and design of form machinery and equipment using solar		
		 Seed to harvesting consultancy for better productivity and enhancement of 		
		income		
		 Green house expansion to management with cost effectiveness and efficiency Project based consultancy for horticulture and vegetable farming from small 		
		to mega project		
		Consultancy for effective organic and inorganic farming for profit.		
		Training projects for group of farmers and managers on all aspects of		
		 Finance related consultancy on crop insurance, and other activities. 		
		 Training of farmers 		
		Bee keeping Mushroom cultivation and Herbal garden consultancy on		
		turnkey mode		
2.	Humanities,	Survey based projects in rural and urban areas Translation work on a two logic		
	Arts and	 Translation work on a turnkey basis Publication of books journals and magazing on from incontion to marketing 		
	Languages	 Campaign design and management 		
		 Design and execution of social work project in rural and urban area 		
		 Training project on soft skill, personality groom and other aspects of compatitive sphere. 		
3.	Commerce	 Case based and regular Consultancy on taxation and book keeping 		
		Preparation of professional Project Reports		
		Training on tally, taxation and other aspects of accounting		
		Project based consultancy in commerce		
4.	Management	 Project management right from concept to conclusion Training of human resources in all spheres at various codes from worker to 		
		senior manager		
		Statistical Analysis and consultancy		
		Report writing and DPR presentation		
5.	Civil	Testing of building material		
	Engineering	 Conduct and Generation of survey report Architectural decign of all kind of civil construction 		
		 Civil project design for inception to execution 		
6.	Physical and	Analysis of causes which affects temperature rising		
	Life Science	Projects writing of power of recycling		
		 Study projects on invasive and endangered species Design of projects based on environmental spin as and evetainshility. 		
		 Design of projects based on environmental science and sustainability All types of advanced testing of material 		
		 Developing advanced material based solution for various problem in emerging 		
		fields of nano material and other material		
		Project management right from specification design to commission		
		Development of solar material		

S. No.	Fields	Consultancy Services
7.	Computer Science Engineering & Information Technology	 Research projects based on IOT and their model developments Consultancy and project writing and of Principal Component Analysis, Rule learning, Clustering and Affinity Grouping of Data Mining Machine Learning research projects based on repetition of past data Provides Consultancy on Graphic Designing and 2D Animation Projects
8.	Electronics and Communication Engineering	 Consultancy and project writing on wireless LAN, wireless MAN, wireless PAN and wireless WAN Consultancy for different applications of sensor networks such as IoT, Industrial Automation, Video Surveillance etc. Hands on Practices on Single Phase Electrical Circuits Consultancy and project writing on applications of communications in Digital, Wireless and Optical.
9.	Mechanical Engineering	 Consultancy and project writing on Energy and Emission control technologies of Internal combustion Engines Consultancy for Material and inventory management for industries. Consultancy and project writing for industrial application of production engineering by using advanced machines such as CNC, Milling, Drilling, Lathe Machines etc. Training on Refrigeration & Air Conditioning Hands on training of solar systems in solar equipped labs
10.	Electrical Engineering	 Consultancy and project writing on Control System Training on Integrated Circuits & VLSI Consultancy and project writing on Communication Systems



12 COLLABORATIONS & MoU

MEANSTO AGU

The Memorandum of Understanding (MoU) defines a pivotal role in promoting strategic partnerships between AGU and various universities, research institutions, and industries, each with well-defined objectives. AGU places strong emphasis on cultivating active MoUs and collaborative projects to establish enduring relationships with external entities. To date, AGU has established over 320 MoUs and collaborations with national and international organizations, facilitating numerous projects that have resulted in tangible outcomes such



as innovative products, patents, and comprehensive research reports. These initiatives reflect AGU's dedication to advancing innovation and knowledge exchange through interdisciplinary collaboration, further strengthening its global presence and impact across academic and industrial sectors.

The research partnerships formed through these MoUs encompass various models, including collaborative research frameworks where researchers from both entities work together to develop project ideas. Additionally, AGU has problem-specific research MoUs that focus on addressing particular research challenges through joint efforts. These initiatives design an environment conducive to interdisciplinary collaboration, enabling the integration of expertise and resources to tackle complex issues effectively. These partnerships not only facilitate knowledge exchange but also drive innovation and the development of practical solutions to pressing research challenges.



ACTIVE INTERNATIONAL COLLABORATIONS & MoU

ACTIVITIES AS PER INTERNATIONAL COLLABORATIONS AND MOU'S

There are 14 active international collaborations and MoU's, and some significant activities under collaborations are as follows:-

International and the second	S.No.	Organization	Collaborative	Area of Collaboration	Activities
1. ICEWARM (Australia) RNTU, Bhopal Water Resource Management • Jointly organized ICWEES-16 2. RPI, New York (USA) RNTU, Bhopal • Collaborative Research • Exchange Faculty/Student • Jointly organized ICWES-16 3. MOI University (Kenya) RNTU, Bhopal • Collaborative Research • Exchange Faculty/Student • Jointly organized ICETST-14 4. Tribhuvan University (Nepal) RNTU, Bhopal • Research Oriented Activities • A research project 5. NCTU (Taiwan) RNTU, Bhopal • Joint Research Projects • One Indo Taiwan Research Project 6. Polylecnica de Valencia University (Spain) RNTU, Bhopal • Joint Research Work (USA) • Joint Research Oriented faculty visit 7. A & M Texas University (USA) RNTU, Bhopal • Climate Change and Water Management • Jointly organized ICWES-16 9. MOI University RNTU, Bhopal • Research in IOT • Research Oriented faculty visit 8. Florida State University (USA) RNTU, Bhopal • Research in Environment & Energy • Research Oriented faculty visit 9. MOI University RNTU, Bhopal • Research in Environment & Energy • Research Oriented faculty visit 9. M			University		
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ACTIVE NATIONAL COLLABORATIONS & MOU

AGU has established over 300 national collaborations and Memorandums of Understanding (MoUs) across diverse sectors, including research organizations, industries, government universities, and private universities. These partnerships are systematically analyzed to assess their distribution and nature, offering valuable insights into the breadth and depth of AGU's national engagements. By categorizing these collaborations, AGU gains a clear perspective on its extensive network, allowing it to strategically harness these relationships to foster innovation, facilitate knowledge exchange, and drive societal impact. This structured approach not only helps in identifying new collaboration opportunities but also enhances AGU's capacity to address challenges and maximize the collective impact of its partnerships at the national level."





AGU in Chinese Universities

AGU in European Universities

AGU in American Universities

13 RESEARCH EVENTS AT AGU

At AGU, research events serve as vital platforms for promoting innovation, collaboration, and knowledge exchange among researchers, industry experts, and students. These events play a crucial role in promoting interdisciplinary research, facilitating networking opportunities, and showcasing groundbreaking discoveries. AGU actively organizes and participates in various research-oriented events, including conferences, symposiums, workshops, and industry-academia interactions.

Shodh Shikhar – Vigyan Parv 2025

Shodh Shikhar – Vigyan Parv 2025 is AGU's premier research and innovation Conference, dedicated to celebrating scientific advancements, raising interdisciplinary collaboration, and bridging the gap between academia and industry. This flagship event serves as a dynamic platform for researchers, scientists, industry leaders, and students to exchange ideas, showcase innovations, and address pressing global challenges through research-driven solutions.

Event Highlights

- Research Paper Presentations & Technical Sessions
- Scholars from diverse disciplines will present their latest research findings through oral and poster presentations, encouraging academic discussions and knowledge sharing.
- Keynote Lectures & Expert Panels
- Renowned scientists, academicians, and industry experts will deliver insightful keynote speeches and participate in panel discussions on emerging trends, technological breakthroughs, and future research directions.
- Workshops & Hands-On Training
- A series of workshops and training sessions will be conducted, covering advanced research methodologies, artificial intelligence in research, data analytics, and scientific publishing best practices.
- Industry-Academia Convergence
- Special sessions will be dedicated to developing collaboration between academic researchers and industry leaders, facilitating technology transfer, startup incubation, and commercialization of research.
- Innovation & Research Expo
- The expo will showcase groundbreaking innovations, prototypes, patents, and research projects developed by AGU researchers, providing opportunities for networking, funding, and industry collaboration.





- Young Scientist Awards & Research Recognitions
- To encourage and acknowledge young researchers, Shodh Shikhar Vigyan Parv 2025 will feature awards for outstanding research contributions, encouraging a culture of excellence in research.

Impact & Significance

Shodh Shikhar – Vigyan Parv 2025 aims to strengthen AGU's research ecosystem by promoting interdisciplinary collaboration, facilitating innovation, and contributing to scientific and technological advancements. The event is set to be a landmark in AGU's journey towards research excellence, driving impactful discoveries to a strong research-oriented scientific community.



Shodh Shikhar 2022



Shodh Shikhar 2023

















14 **AISECT PUBLICATION- INHOUSE PUBLICATION**

INTRODUCTION OF AGU PUBLICATION

The AISECT Group includes AISECT Publication Private Limited, a distinguished publishing entity that produces a wide array of literature, including books, novels, short stories, and nonfiction works. Many authors associated with AGU have had their works published through AISECT Publication.

Content for these publications is meticulously developed by the AISECT Content Development Group, which is dedicated to producing high-quality educational materials tailored to the evolving demands of the skill development ecosystem. This group comprises a team of highly qualified trainers, consultants, and Subject Matter Experts with extensive industry experience, ensuring that the content meets global standards.

AISECT's publications cater to both academic programs and National Skill Qualification Framework (NSQF)-aligned job roles, providing learners with comprehensive insights into their respective fields. By offering well-structured, industry-relevant content, these publications enhance the training experience and equip individuals with the knowledge and skills required for career success.

ELECTRONIKI APKE LIYE

This is the most popular science magazine of India which has helped spreading science communication to nooks and corner of the country. This is the only science magazine in Hindi being continuously published for last 35 years in over 40 thousand copies.

तेवद्वविकी वयनके लिए HUIFAL का राचव

CRIG BULLETIN

This bulletin is published every year in the beginning of the academic year to show case research and innovation of the constituent universities of AISECT Group of Universities.

IN HOUSE RESEARCH JOURNALS

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64







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