



Department of
Biotechnology
Faculty of Life Science and Technology



Skill India
कौशल भारत - कुशल भारत



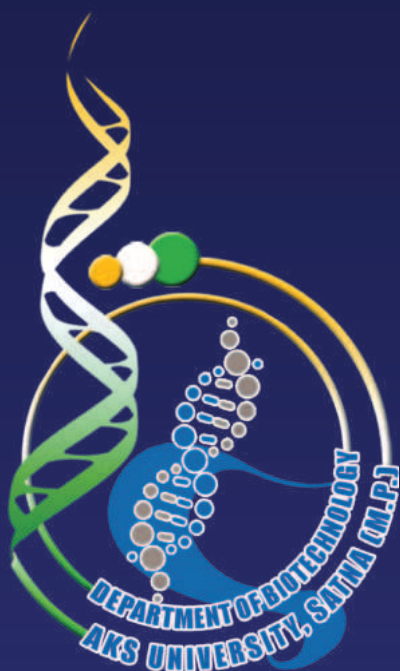
For More Details Please Visit www.aksuniversity.ac.in

Vision

To be a center of excellence in biotechnology education, research, and innovation by adopting Outcome-Based Education to nurture skilled professionals, entrepreneurs, and researchers who contribute to sustainable development and societal advancement.

Mission

- To implement NEP-2020 and Outcome-Based Education (OBE) for fostering critical thinking, problem-solving, and industry-relevant competencies in biotechnology.
- To promote research and innovation in biotechnology, addressing challenges in healthcare, agriculture, and environmental sustainability.
- To develop industry-ready professionals through hands-on training, advanced laboratory exposure, and interdisciplinary learning.
- To encourage skill development and entrepreneurship by integrating academic learning with real-world applications, fostering startup culture and technology-driven solutions.
- To establish strong collaborations with academia, industry, and research institutions for knowledge exchange and holistic student development.



Glimpses

Strength

More than
650
students



Faculty & Staff

24
Experienced, Skilled
& Research Oriented
Faculty and staff



Programs Offered

07
Under Graduate
Post Graduate
&
Research Programs



Ecosystem for Research, Innovation, and Skill Development

- Dedicated Research Labs
- BIRAC supported Centre
- LSSDC Skill Program
- High Impact Publications
- Patents
- Bioproducts
- Bio-Startup



Programs Offered

According to NEP-2020 Mandates and
Outcome Based Education (OBE) Curriculam

Under Graduate

B.Tech. Biotechnology
B.Sc.(Hons) Biotechnology
B.Sc. (Hons) Biology

Post Graduate

M.Tech. Biotechnology
M.Sc. Biotechnology
M.Sc. Microbiology

Research

Ph.D. Biotechnology
Ph.D. Microbiology

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Student's Achievements



Shivpal Verma, B.Tech/MTech student (2019)
awarded Ph.D (2023) from Northwest A&F
University, China under the guidance of Dr. Jung



Taiwan Experience Education Program (TEEP)
"Taiwan Texas Bilateral Science Summer camp for
Precision Medicine" at China Medical University,
Taiwan.

250+

Number of
students placed

200+

Students attended
skill development
programs

05+

Foreign Visits

350+

Students attended
prominent industry
as trainee and intern

10+

NET/SLET/GATE
/DBT-JRF/DST
INSPIRE

150+

NSS/NCC/UCC
Outreach activities

Students attended
conferences and
workshops

750+

Students visited
industries and
academic
institutions

350+

Students attended
prominent research
labs as trainee

150+

Awards
and
Recognition

08+

Participation
in AIU Events

65+

Bio-Incubatee

15+

Ph.D. Scholar's Achievements



Ms. Charu Vyas, PhD Scholar
DST AWSAR Award
by Department of Science & Technology,
Govt. of India, New Delhi



Piyush Kant Rai, Ph.D. Scholar
International Postdoctoral Fellowship
at
Institute of Water and Waste Water Technology
(IWWT)
Durban University of Technology,
South Africa

40

Conferences and
workshops attended



05

Best Paper Awards
(Oral)



04

Best Paper Awards
(Posters)



08

Awards and
Recognition



06

Bioinnovation and Bioproducts
from Ph.D. Research



45

Papers Published

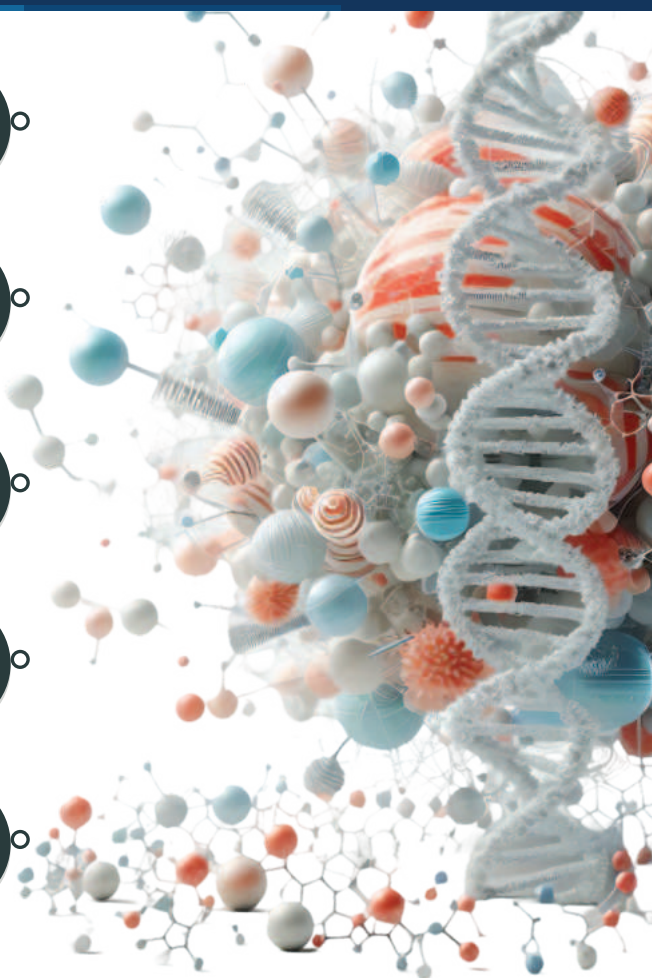


07

Book Chapters



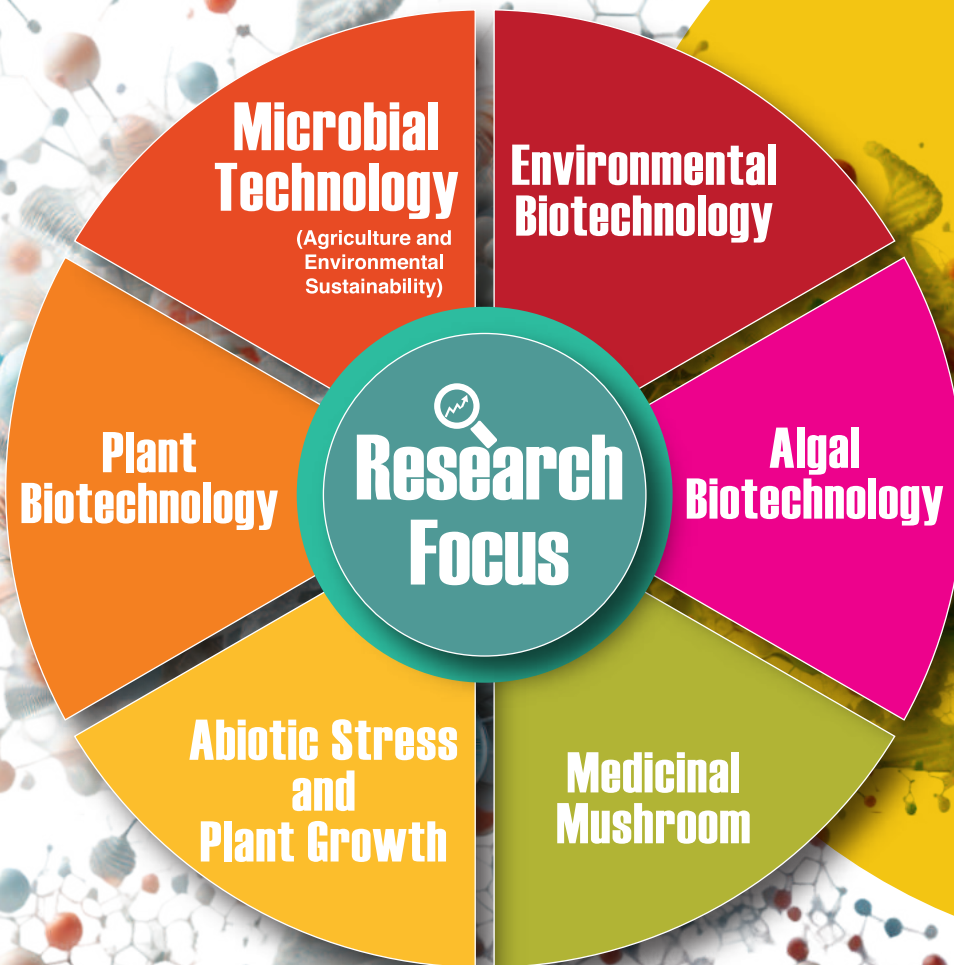
Faculty's Achievements



Major Recruiters



Research & Innovations



Best Practices





Patents Published

Title of the Innovation	Patent No.	Patent By
Nano-bioformulation of microbial consortium to enhance the shelf-life of liquid biofertilizer	202421037398 A	Dr. Kamlesh Choure
Effect of alkaline treatment on physical behaviour of habara fibre towards development of sustainable composite	202341018091 A	Dr. Ashutosh Pandey
Medical device to measure maximal inspiratory and expiratory pressures	401084-001 Granted	Dr. Ashwini A. Wao
Cordyceps militaries with herb-based formulation for preventing lung cancer and SARS-CoV-2	202121025706 A	Dr. Kamlesh Choure

Department's Achievements



- Trained and Skilled more than 600 students
- ~100% placements and recruitments achieved
- More than 84 research articles published in last 5 years in high impact factor journals as per Clarivate Analytics. Highest IF paper is 12.
- Completed >10 R&D Projects.
- 15 technologies and bioproducts developed.
- 06 startups are incubated. 08 patents filed/published
- Students qualified DBT-JRF, CSIR-NET, GATE, DST-Inspire fellowships
- Ph.D. scholars recieved DST AWSAR Award and International post doctoral fellowship.
- Organized more than 30 workshops and 05 National and International Conferences.
- Association with prestigious national importance research institutions of CSIR/DBT/ICAR/ Central Universities/IITs/ scientific societies like BRSI/AMI/ NASI.
- Students and faculty member regularly on visit to foreign Universities and Research Institutions
- Association with LSSDC and biopharma sector for students on job training and placements
- BIRAC E-YUVA Centre sanctioned by Biotechnology Industry Research Assistance Council (BIRAC), Ministry of Science & Technology, Govt. of India, New Delhi.

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Visitors of the Department of Biotechnology (2019-2023)

Dr. Ashok Pandey, Distinguished Scientist, CSIR-IITR, Lucknow, India
 Dr. Archana Tiwari Amity University, Noida India
 Dr. Ashish N. Sawarkar Motilal Nehru National Institute of Technology Prayagraj, India
 Dr. Ayon Tarafdar ICAR-Indian Veterinary Research Institute, India
 Dr. Bhuwan Mishra Center of Innovative & Applied Bio Processing, India
 Dr. Byong-Hun Jeon Hanyang University, South Korea
 Dr. Cristobal Aguilar Research Group of Bioprocesses & BioProducts, Mexico
 Dr. Eldon Raj Rene IHE Delft Institute for Water Education, Netherlands
 Dr. EM Papamichael University of Ioannina, Greece
 Dr. Ganesh D. Saratale Dongguk University, South Korea
 Dr. Grzegorz Piechota Laboratory of Biogas Research & Analysis, Poland
 Dr. Helena Khatoon Chattogram Veterinary and Animal Sciences University Bangladesh
 Dr. Josef Marousek The Institute of Technology, Czech Republic
 Dr. Mukesh Kumar Awasthi Northwest A&F University, China
 Dr. Nidhi Pareek Central University of Rajasthan, India
 Dr. Poonam Singh Ulster University, Northern Ireland, United Kingdom
 Dr. Pratyush Shukla Banaras Hindu University, Varanasi, India
 Dr. P.S. Bisen Jiwaji University, Gwalior, India
 Dr. R.C. Dubey Gurukul Kangri University, Haridwar, India
 Dr. O.N. Tiwari Indian Agriculture Research Institute (IARI), New Delhi, India
 Dr. Ranjana Sirohi University of Petroleum & Energy Studies, India
 Dr. Reeta Rani Singhania National Kaohsiung University for Science and Technology, Taiwan
 Dr. Renu Wadhwa AIST, Japan
 Dr. Rui Oliveira Universidade Nova de Lisboa, Portugal
 Dr. S.K. Dubey Banaras Hindu University, Varanasi, India
 Dr. Sunil Kaul AIST, Japan
 Dr. Thallada Bhaskar CSIR-Indian Institute of Petroleum, India
 Dr. Vinod Kumar CSIR – Indian Institute of Integrative, Jammu, India
 Dr. Vivekanand Vivekanand Malaviya National Institute of Technology Jaipur, India
 Dr. Yoshiro Ohmiya National Institute of Advanced Industrial Science and Technology (AIST), Japan



Distinguished Speakers From Different Nations



Prof. Ashok Pandey
India



Dr. B. Narayan,
Director, CSIR-IITR, Lucknow



Dr. Yoshiro Ohmiya
Japan



Dr. Jose Sandoval,
Mexico



Prof. EM Papamichael
Greece



Prof. Jose Texiera
Mexico



Dr. B.H. Jeon
South Korea



Dr. Rui Olivera
Portugal



Dr. T. Bhaskar
India



Dr. Sunil Kaul
Japan



Prof. Jose Martinez
Mexico



Prof. Cristobal
Mexico



Dr. Pavan Jutur
India



Dr. Nivedita Lenka
India



Dr. Renu Wadhwa
Japan



Dr. Pratyosh Shukla
India

Some Recent Conferences & Workshops Organized

Program organized	Days	Participants	Sponsoring bodies
International Conference on Advances and Innovations in Biotechnology for Sustainable Development during 5-7 April, 2019	03	900 participants in including 110 speakers, researchers, UG & PG students of basic sciences streams	MP Council of Science & Technology, Govt. of MP, Bhopal, NASI-BER Chapter and AKS University Satna
eRefresher Course in Biotechnology during 3 rd September to 28 th Oct 2020	54 days “20 Workshops Conducted”	More than 1100 participants and 135 Invited speakers	Supported by Biotech Research Society, India, Asian PGPR Society, NASI-Bhopal Chapter and AKS University, Satna
Scientific Event “Biocreation-2021” organized on 18-20 March, 2021	03	450 participants including UG, PG students of life sciences streams and faculty and research scholar	NASI-Bhopal Chapter and AKS University, Satna
Seven Digital Workshop Series with Merck High End Skill Development Centre during 26 th April-6 th August, 2021	35 days	More than 750 participants	Jointly organized by Merck High End Skill Development Centre-CSIR-IMTech, Chandigarh and AKS University, Satna
One Week National Workshop on Research Methodology and Current Research Trends during 27-31 March, 2023	One Week	More than 150 participants	Sponsored by The National Academy of Sciences of India (NASI)- Bhopal Chapter and supported by The Biotech Research Society, India (BRSI) and Society of Life Sciences (SLS), India
2 nd International Conference on Advances and Innovations in Biotechnology for Sustainable Bioresources and Bioeconomy (AI-BSBB2023) during 22 nd -25 th November, 2023	04 Days	More than 700 participants and 110 Speakers from 11 countries	Department of Biotechnology (DBT), Govt. of India, Defence Research and Development Organization (DRDO), The National Academy of Sciences, India (NASI), Bhopal Chapter

Top 10 Research Projects Funded by Government Agencies & University

S. No.	Name of the funding agency	Programme Title	Year of funding	Duration	Amount sanctioned	Status
1.	Biotechnology Industry Research Assistance Council (BIRAC), Ministry of Science & Technology, Govt. of India	Empowering youth for undertaking value added Innovative translational research (E-YUVA) -Centre	2024	First Phase (For 03 Years)	Rs. 2.665 Crore	Ongoing
2	AKS University	Development of mycoherbicide for elimination of water hyacinth	2022	2 years	Rs. 4 Lakh	Completed
3	AKS University	Development of microbial decomposer to enhance the quality of compost and reduce the maturation time	2022	2 years	Rs. 6 Lakh	Completed
4	AKS University	Assessment of microbial diversity associated with hot springs of Madhya Pradesh for industrial enzymes	2019	1 year	Rs. 2.00 Lakh	Completed
5	AKS University	Microbial diversity, molecular identification, metagenomics and Transcriptomics of microbial culture stored in the laboratory	2021	1 year	Rs. 5.00 Lakh	Completed
8	Madhya Pradesh Biodiversity Board, Bhopal (M.P.)	Study of Flora and Biodiversity of Parasamaniya Plateau of Satna District of Vindhyan Region, Madhya Pradesh	2014-17	03 Years	Rs. 9.98 Lakh	Completed
9	M.P. Biotechnology Council, Bhopal	Genome Analysis and Diagnostics Development for Detection of Soyabean Viruses.	2014-17	03 Years	Rs. 11.68 Lakh	Completed
10	MP Council of Science & Technology, Bhopal	Nano-bioformulation of Microbial Consortium for Alleviation of Diseases to Enhance the Productivity of Legume Crops	2016-2018	02 Years	Rs. 4.98 Lakh	Completed

Seed money research grant sanctioned by the University : 15 (2019-24)

Projects sanctioned by the other agencies : 74 (2019-24)



BIRAC E-YUVA CENTRE

AKS UNIVERSITY, SATNA (M.P.) INDIA

Supported by
Biotechnology Industry Research Assistance Council (BIRAC)
Ministry of Science & Technology, Govt. of India, New Delhi (INDIA)



Nurtured Under

**Innovation
Ecosystem**

Empowering youths for undertaking
value added Innovative Translational Research (E-YUVA)

Bio-incubation leads to Bio Startups



Capacity and Infrastructure for Innovation Support

- Dedicated office space
- IT Infrastructure support including computer system, printing facilities and high speed internet
- Mentor support
- 24 hours Laboratory access
- Library facilities
- Expert Workshops related to startups on financing, legal aspects, IP Services,
- Prototype development support
- MVP development support
- Business development support
- Free support to fetch funds from Angel Investors



Biotechnology:

- Nanobiofertilizers,
- Waste Bio-Decomposers,
- Mycoherbicides,
- Biopesticides,
- Industrial Enzymes,
- Microbial Diagnostics,
- Mushroom products

Team of experienced faculty members:

- Agricultural Biotechnology,
- Microbial Technology,
- Algal Biotechnology
- Environmental Biotechnology,
- Plant Biotechnology,
- Bioinformatics,
- Genetic Engineering,
- Genomics and Proteomics.

Association:

With diagnostic industries,
Pharmaceutical industries,
Food-Agro Industries and associations,
Scientists and Academicians
Scientific Societies

Biotechnologies



Nano-biofertilizer



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Biopharma Industry Interface Academy, AKS University



Skill Development Training



MoU Exchange

Life Sciences Sector Skill Development Council (LSSSDC)
(Ministry of Skill Development & Entrepreneurship, Govt. of India, New Delhi)
&
AKS University, Satna (M.P.)

Free On-Job-Training (OJT) in leading biopharmaceutical industries

Full placement support

Entrepreneurship mentorship for establish own business or startup

Business Incubation opportunities

Apprenticeship Embedded Degree Program with LSSSDC as per the NEP-2020

Skill Development Training Successfully Conducted on the Following Job Roles

Sr. No.	Department	Job role	QP Code
1.	PMKVY 3.0-HSSC	COVID Frontline Worker (Medical Equipment Support)	HSS/Q5604
2.	PMKVY 3.0 HSSC	COVID Frontline Worker (Basic Care Support)	HSS/Q5104
3.	LSSSDC	Quality Control Microbiologist	LFS/Q0308
4.	Skill Hub ASCI	Mushroom Grower (Entrepreneur)	AGR/Q7803
5.	LSSSDC	Bioinformatics Scientist	LFS/Q3905
6.	LSSSDC	Associate Affairs and Intellectual Property (IVD and Medical Devices)	LFS/Q0513

Skill Development Initiative



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Infrastructure & Learning Resources

01 Microbial Technology Lab

02 Algal Biotechnology Lab

03 Molecular Biology Lab

04 Plant Biotechnology Lab

05 Environmental Biotechnology Lab

06 Fermentation Technology Lab

07 Computational Biology & Bioinformatics Lab

08 Bioprocess Technology Lab

09 Biochemical Engineering Lab

10 Animal Cell Culture Lab

11 Immunotechnology Lab

12 Pharmaceutical Biotechnology Lab

13 Agriculture Biotechnology Lab

14 Edible and Medicinal Mushroom Production Units

15 Bionanotechnology Lab

16 *Cordyceps* Production Unit



STRATEGIC PLAN (2024-2029)

01 Integration of Domain Specific IKS Courses in all Programs (2024-25)

02 Implementation of NEP-2020 mandates for Promotion Research, Innovation and Skill Development in Biotechnology (2024) and advancing facilities to achieve SDGs

03 Start new Program in Data Science and Medical Biotechnology (2025-26)

04 International Academic Association for Student and Faculty Exchange (2025-26)

05 Establish a Bioincubator & BioTech Park for Promoting Bioinnovation (2025-27)

06 Establish strong research facilities for cutting edge translational research for Agriculture and Environmental Sustainability (2025-28)

07 Establish a BioPharma Industry Interface Academy for Skill Development (2025)

08 To organize of International Conference and BioStartup Summit Yearly (from 2025)

09 Self Sustained Department (2028)