

# BSDU NEWSLETTER



July-December, 2022



## Highlights

BSDU @ World Skills Competition

BSDU Students' Clubs

Visits @ BSDU





*Dear Colleagues!*

*Welcome to the 10<sup>th</sup> issue of the BSDU Newsletter!*

*Reflecting on the activities held at the University during the past six months which would forerun all that 2023 is to usher in, this issue of the BSDU Newsletter proudly records their contribution towards building the academic prowess of the University further establishing BSDU as a unique and successful model of Skill Education.*

*The spectrum of events encompassing the administrative, academic, co-curricular and extracurricular activities ranging from the skill-training imparted to students, upskilling training extended to the employees of the Govt. sector and corporate trainees as well from reputed MNCs, the consultative meeting with the academic intelligentsia, the international skill workshop and exposure visits, research activities carried out by the faculty members and Ph.D. Research Scholars, BSDU students' Clubs activities, FDP's, students' Placements and internships, IIC activities, including the scholarly articles and many such activities presented in the issue affirms BSDU's resolute ambition of empowering the Indian Youth with skill education and benchmarking the same in the country.*

*We thank the Management for the support and appreciate the help extended by Schools and Departments in bringing out this newsletter.*

*Hope you enjoy reading it!*



**Dr Sangeetha Noval**  
Head,  
School of General Education





*Dear Members of the Education Strata,*

*Bhartiya Skill Development University has progressed resolutely at a steady pace. Since its inception in 2017, the University is engaged not only in skilling and academic activities but has also sincerely invested efforts in improving research and extracurricular activities of the students of the University.*

*The faculty have brought laurels to the University through research and innovations leading to technologies with social impact. Further, the students of University have represented BSDU in various National and International Skill Competitions which have brought glory and acclaim to the University.*

*In the academic arena, Bhartiya Skill Development University is taking incremental steps to realize its objective of imparting quality based skill education by implementing various suggestions put forth by the Govt. of India, Regulatory Bodies and the National Education Policy, 2020. The University has also opened up opportunities for connecting with Industry experts through TOT Programmes, Conclaves, Competitions, Exhibitions, etc. being a few classic examples of exploring the new initiatives prevailing in the market.*

*I am proud to share the 10<sup>th</sup> edition of the BSDU Newsletter which contains all the related activities and initiatives which will give you a fair idea of the efforts taken by our staff and students.*

*I take this opportunity to welcome you all to our BSDU Fraternity.*

**Dr. Sandeep Kumar Tomar**  
Registrar  
Bhartiya Skill Development University



## Administrative Activities

### Memorandums of Understanding Signed

Carrying forward the legacy of collaborative growth and development, the following MoUs were signed by the University to get associated with the organizations mentioned below:

#### MOUs SIGNED FROM 01 JULY 2022 TO 31

#### DECEMBER 2022

S. No	MOUs with	Purpose	Date of Signing
1	Rear Renewable Energy Association of Rajasthan, Jaipur	Skill-Based Training, Education, Research and Development and Employment	05.08.2022
2	Sobhasaria Group of Institute Sikar, Rajasthan	Skill-Based Training, Education, Research and Development and Employment	03.09.2022
3	Bhagwan Mahaveer Cancer Hospital & Research Centre Jaipur	Skill Based Training, Education, Research and Development and Employment	14.10.2022

### World Youth Skills Day



Signifying the strategic importance of equipping students with Skills in order to empower them, the *World Youth Skills Day* (WYSD 2022) was celebrated on 15 July 2022 in the University in the form of "*Kaushal Charcha*". In addition to Mr. Jayant Joshi- the Chief Functionary, RUJCT, Mr. Markus Gmenier- the CEO, JCF, Prof. Achintya Choudhury- President, BSDU, various leading industrialists of Jaipur viz. Mr. Arun Agarwal- CMD, Keshav Industries and Executive President, Federation of Rajasthan Trade and Industries, Mr. Jagdeesh Somani- CMD Somani Group of Industries, Mr. Rajesh Kandoi- CMD, Austeofix Surgicals Pvt. Ltd. and Mr. Ashutosh Agarwal-MD, Tesca

Technologies Pvt. Ltd. graced the occasion. The esteemed industrialists deliberated on the importance of developing skills, innovation and entrepreneurial spirit among students for the growth of the economy. Adding to the magnificence of the day, a *Skill- Fair* was also organized in the premises of the University which was inaugurated by the dignitaries and the invited guests. The renowned industrialists highly appreciated the skill-models and various innovative projects made by students of the various Schools and commended the creative and innovative talents as a result of the world class training imparted at the University.

### Orientation Programme: Week of Welcome 2022

As a welcoming gesture, a week-long orientation programme was organized from 22- 27 August 2022 for the newly admitted students of the Summer Session 2022-23. The event was graced by Prof. Achintya Choudhury- President, Dr. Sandeep Tomar- Registrar, Col. Raj Kumar- Provost and Principal of School of Computing Skills, Dr. Shaikh Juned Saoud- Deputy Registrar. Including many other faculty members, Dr. Shekhar Kapoor- Training and Placement Officer, Dr. Sangeetha Noval- Head, School of General Education, Dr. Perna Srivastava- Officiating Deputy Controller of Examinations and Dr. Rajdeep Deb- Head, Admissions were present on the occasion.

During the first three days, sessions were held to acquaint the students on various aspects such as Discipline, Transport and Hostel facilities, Personality Development, Confidence Building, Grooming, Communication Skills, Stage Fear, Examination rules and regulations etc. In order to familiarize students with both the campuses, visits were organized to the various Schools of BSDU. A Plantation Drive was also organized by BSDU in association with Viranchi India, Jaipur on 27 August 2022 to develop the eco-consciousness of the newly admitted students who were provided with opportunity to plant saplings near the Administrative Block of BSDU.

## Consultative Meeting with Stakeholders

In the backdrop of the emerging changes and new opportunities in the Indian Universities offering vocational courses, BSDU Jaipur in collaboration with *Commonwealth Educational Media Centre for Asia* (CEMCA), organized a 2-day *Consultative Meet for Validation of the Training Curriculum for Vocational Educators of Indian Universities* at the University premises on 10-11 November 2022. The objective of the meeting was to validate and enhance the curriculum and pedagogy for vocational educators of higher education that could be developed as an open courseware that prepares them to make a transition to vocational education.



Dr. B. Shadrach, Director, CEMCA, and Dr. Sandeep K. Tomar, Registrar, BSDU chaired the consultation. In his opening remarks, Dr. Shadrach, emphasized on developing courses aiming at enhancing competencies of vocational educators in facilitation skills and to reinforce learning in classroom settings. Dr. Tomar provided a detailed overview of BSDU and its contribution in improving the overall skills ecosystem in India by pioneering industry-led courses and collaborations with various sector councils. The inaugural session was graced by Mr. Jayant Joshi, the Chief Functionary, RUJCT.

The consultation was facilitated by Dr. Rajdeep Deb, Principal, School of Entrepreneurship Skills, BSDU, Mr. Purandar Sen Gupta, Master Trainer in Instructional Design, India, Dr. Stephen Billett, Professor of Adult and Vocational Education, Griffith University, Australia and Mr Saurabh Mishra, Programme Officer- Skills, CEMCA. While reviewing the curriculum and pedagogy, the experts deliberated on a host of issues viz. flexible degree courses in a work-integrated format, pedagogical differences between general education and vocational education, NSQF levels, NCVET approved

curriculum, teacher education course content, teaching methodologies, transitioning from being a traditional teacher to a vocational facilitator, usage of digital tools and technology, etc.

The deliberations were concluded with the felicitation ceremony of the experts and a networking dinner was organized by CEMCA and BSDU Jaipur.

## Exposure-Tour and Skill-Workshop on Innovation & Creativity

Committed to supporting individuals in their career by helping them to be creative and innovative in the organization, thereby improving their productivity and job satisfaction, the School of Entrepreneurship Skills hosted a delegation of international participants from 22 countries on 26-27 December 2022. The delegates participated in the *Indian Technical and Economic Cooperation Training Programme for a Skill Workshop on Innovation and Creativity for Organization Growth and Excellence* held at the University premises.



The two-day *Exposure- Tour and Skill-Workshop* enabled the trainees to embrace and practice creativity and innovation, skills to adapt to change, stay competitive and make a positive difference to their organizations. The prime objective of the skill workshop was to instill a belief in each one being creative and innovative. The interactive, engaging, and discussion-based workshop covered topics such as *Whole-Brain Thinking, Mental Agility, Creative Resilience, Well-being and Team Facilitation*.

Mr. Olasunkanmi Opeifa, the Senior Education Officer from Nigeria extended his special thanks and appreciated Dr. Rajdeep Deb, Principal, School of Entrepreneurship Skills, the facilitator of the workshop for the highly informative presentation given on *Creativity and Innovation*. Mr. Leonard Ruto, the

teacher from Kenya emphasized the need to learn and practice the skills and strongly felt that the workshop was oriented towards the same by providing a framework to accomplish them. Mr. Isuru Chinthana Hettiarachchi, the Senior Lecturer of Sabaragamuwa University of Sri Lanka complimented the inspiring and innovative concepts shared during the workshop.

As a part of their exposure visit, the participants visited various Schools of BSDU Jaipur and interacted with the University community. The delegates were highly impressed with the concerns such as *RS India*- a high precision manufacturing unit, *Perto India Pvt. Ltd. and ATM & Access Control maker* during their exposure tour.

## Academic Activities

### Academic Council Meeting

The third Academic- Council meeting of the University was held on 4 August 2022 in hybrid mode in the Conference Room of the Polymechanic Block. In addition to the President- Prof. Achintya Choudhury, CEO, JCF- Mr. Markus Gmeiner, Head Standard, Tourism and Hospitality Skills Council- Dr. Sunita Badhwar, Executive Director, IT-ITES Sector Skills Council- Dr. Sandhya Chintala, Head (Quality, Certificate & Assurance) PSSC (Special Invitee)-Shri Prakash. C. Jain, CEO, Automotive Skills Development Council- Mr. Arindam Lahiri, the members of the Academic Council of BSDU attended the meeting. The Schools and Sections presented their recommendations to the council for suitable decisions and approvals.

### Board of Studies Meetings

Reviewing and updating the course contents of the B. Voc and M. Voc Programmes, the following Schools conducted their independent Board of Studies meetings with the constituted BoS Committees:

S. No.	Name of the School	Date of BOS Meeting	Chairperson
1.	School of General Education	2 July, 2022	Dr. Sangeetha Noval- Officiating Principal & Associate Professor

2.	School of Computing Skills	5 December, 2022	Col. (Dr.) Raj Kumar- Professor and Head
3.	School of Electrical Skills	13 December, 2022	Dr. Ritu Tak - Officiating Principal & Associate Professor
4.	School of Automotive Skills	15 December, 2022	Dr. Sunil Anand- Officiating Principal & Associate Professor
5.	School of Refrigeration and Air Conditioning Skills	23 December, 2022	Dr. Sheetal Jain- Officiating Principal & Associate Professor
6.	School of General Education	23 December, 2022	Dr. Sangeetha Noval- Officiating Principal & Associate Professor

## Co-curricular Activities

### • Poster- Making Competition

Considering the holistic development of students and to tap their creative talents, the School of General Education organized a Poster-Making Competition for the students of the University. The competition was held on 2 July 2022 in commemoration of the *Bharat ki Azadi ka Amrit Mahotsav*. The posters were made on the following themes:

- *Gender Equity*
- *Beti Bachao Beti Padhao*
- *Save Environment for a Better tomorrow*

A good number of students participated in the event. The jury comprising the faculty members of the School of General Education selected the best entries on the basis of creativity, presentation and concept clarity.



The following B.Voc. students were declared winners of the competition:

S.No	Name of Student	Sem.	School	Position
1.	Sohail Khan	III	SAS	1 <sup>st</sup>
2.	Daya Shankar	III	SCS	2 <sup>nd</sup>
3.	Narendra Singh Khangarot	V	SES	3 <sup>rd</sup>

### • Photography Competition

In order to sensitize the students of the University with Photography skills and to give them an exposure of the same, the School of General Education held a Photography Competition for the students of the University on 9 July 2022 on the theme - **Nature**. The period of the competition by virtue of falling in the monsoon season, students were asked to keenly observe the captivating sites in the University campus to capture them. The competition was held under the mentorship of Dr. Rakesh Choudhary, the coordinator of the photography club- Imagery. Students overwhelmingly participated in the competition and the following were the winners:

S.No.	Name of Student	Sem.	School	Position
1.	Dheeraj Kumar Jangid	I	SMS	1 <sup>st</sup>
2.	Ankur Kumar	I	SAS	2 <sup>nd</sup>
3.	Daya Shankar	III	SCS	3 <sup>rd</sup>

### Upskilling Trainings

#### • Training of Trainers (ToT) for Instructors of ITI, Bihar

Adding on to the series of extending training to the employees of reputed Industries and organizations, a 10 - day Training of Trainers (TOT) Programme for Fitter Trade Instructors was organized under the aegis of the Directorate Employment and Training, Labour Resources Department, Govt. of Bihar from 10-20 October 2022.

The School of Manufacturing Skills conducted the training focussing on Hand Skills / Fitter, Conventional Turning, Assembly & Pneumatics including their project

work benefitting 15 trainees. Various specialized trainers of the School imparted the training.



In addition to the training imparted by the School of Manufacturing Skills, the School of Electrical Skills provided a 10- day training to the ITI Institute's Instructors of Fitter & Electrician Trade, Patna Govt. of Bihar on various electrical modules. During the valedictory ceremony held on 20 October 2022, the trainees were awarded with certificates. They also expressed their gratitude for the high- end training and learning experiences at BSDU.

#### • JCB India, Jaipur



The School of Manufacturing Skills coordinated and conducted a training programme from July 2022 to December 2022 to upskill the employees of JCB India, Jaipur. The trainers of the School imparted an enriching training to 25 employees on the modules - Introduction to CNC Machine, Spray Painting, Behaviour Based Safety Management and Introduction to Fluid Sealing Elements.

#### • MAZAK India Pvt. Ltd.



In addition to upskilling the employees of reputed private industries and Govt. sector, the School of

Manufacturing Skills also extended training to two batches of the employees of MAZAK India Pvt. Ltd.

The training was held for the first and the second batches from 1 August 2022 to 7 September 2022 and 28 November 2022 to 7 January 2023 (36 days training) respectively on Engineering Drawing, Measuring & Metrology, Hand Skills/ Fitter, Conventional Milling, Conventional Turning, Surface Grinding, Assembly in addition to Pneumatics & Hydraulics.

- Hilti Manufacturing India Pvt. Ltd.



The School of Manufacturing Skills conducted a training programme for 23 employees of the prestigious organization- Hilti Manufacturing India Pvt. Ltd. at BSDU from 7 November 2022 to 8 December 2022 covering various modules on Engineering Drawing, Measuring & Metrology, Introduction to Pneumatics & Hydraulics, and Introduction to CNC Machine, Basic Lean, Basic Technical Concept, Documentation Skills, Electrical Assembly, Soft- Skills, Behaviour Based Safety Management and Team Building. The trainees were awarded with certificates during the valedictory ceremony held on 10 December 2022.

Further, the trainees of both the batches also underwent a 3-day training extended on Electrical Assembly by the School of Electrical Skills from 24 - 26 November 2022 and from 29 - 31 December 2022 respectively, benefitting the employees of the Hilti Manufacturing India Pvt. Ltd.

- Daikin Air Conditioning India Pvt. Ltd.

The School of Refrigeration and Air Conditioning Skills conducted training for the field technicians of Daikin Air Conditioning India Pvt. Ltd. on 20 December 2022. Field technicians from various business partners upskilled themselves in the training conducted.

- Dr. B. Lal Clinical Laboratory



A training programme for Health Advisors of Dr. B. Lal Clinical Laboratory was organized by the School of Healthcare and Paramedic Skills from June 2022 to July 2022. Fifteen employees of the organization which is also the industry partner of the School, were trained and certified.

- Skill Training to Students of MPS International School



To align with *The National Education Policy (NEP) 2020* which focusses on vocational education to help school students acquire various skills to meet the needs of the industries, the MPS International School- a part of a leading group of Educational Institutions had a training of their students conducted at the BSDU. The training was imparted for two batches of students from 9-13 December 2022, and from 23-26 December 2022 respectively by the School of Automotive Skills in the domain of Automobiles.

The students were overwhelmed with the training conducted by the Swiss expert – Mr. Christian Reber, Project Manager of the School, the Principal- Dr. Sunil Anand and various other trainers.

On completion of the training the students were awarded certificates by the officials of the University during the valedictory ceremony.

- TATA Nexon EV Demonstration

To enrich the students with the latest developments in the field of Electric Vehicles, the School of Automotive



Skills conducted *EV Demonstration* of the leading brand-TATA Nexon on 4 August 2022. The executives from the Akar Fourwheels Pvt. Ltd. extended the latest updates and basic tips on EV vehicles to benefit the students.

### **Workshops Conducted @ BSDU**

- Skill-Workshop on 5S & Kaizen

Aiming to improve students' knowledge about the various quality tools viz. 5S and Kaizen being prominently used in the manufacturing sector all-round the globe, and to enhance their understanding of the workplace management, waste management and safety to be considered while working in industries, the School of Manufacturing Skills conducted a workshop on 1 September 2022 benefitting the students of the School.

- Workshop on Electrical Skills

The School of Electrical Skills conducted a one-day skill workshop on Electrical Skills on 11 July 2022 in the Electrical House wiring lab. In all, 36 students from various ITIs, Schools and Engineering Colleges participated in the same.

- Workshop cum Training programme - Axalta Coating System Pvt. Ltd

The School of Automotive Skills successfully conducted a workshop cum training programme for Axalta Coating System Pvt. Ltd. The expert- Mr. Gajendra Shakya held two training sessions extending from 29-30 September 2022 and from 25-26 November 2022 on Key Spot Repair Paint Technology. The training also focused on the pearlescent paint application and water-borne paint application procedures used in modern vehicles.

- Workshop on Building Awareness on Electric Vehicles



As a measure towards updating students on the trending Electric Vehicles, the School of Automotive Skills conducted a workshop on 3 September 2022. The expert -Mr. Ashutosh Bharadwaj from Tata Motors

educated the students on the key differences between an ICE & an EV, and further emphasized on skill development for the Youth of India in the EV domain.

The expert also elaborated the specifications of EV Drivetrain, Battery Technology, Charging Technology, Level of charging, HV Safety factors for an EV, Regenerative Technology, General Service aspects, PPE used in servicing & testing on EV, EV Components Identification and their working, etc. He further demonstrated the technical operations and ways of handling the EV Structure and its components on the Tata Nexon EV vehicle.

- Workshop on MS Office Tools

The School of Refrigeration and Air Conditioning Skills(SRACS) conducted a workshop on 10 September 2022 on the usage of *MS Office Tools*. Dr. Sheetal Kumar Jain, Assistant Professor and In-charge SRACS and Mr. Devendra Pathak, Trainer of the School, imparted training benefitting 15 students of the School. The workshop aimed to educate the students about various tools of MS Office to efficiently perform various tasks using them.

- Workshop on Cold Storage Industry and Future Scope



The School of Refrigeration and Air Conditioning Skills conducted an online technical session on *Cold Storages and Future Scope* on 24 September 2022. The session was held by the expert Mr. Kamal Sharma- Product Development Head, Archo Industries, Delhi. The participants were enlightened about the cold storage industry and establishment of cold storages, the career opportunities and possible entrepreneurial ventures in the industry, developing relationships with industry for future internships and placements, thus aiding them to shape their careers in the Cold Storage Industry which is equally lucrative as the air conditioning industry.

## Expert Lectures

- Expert Lecture - Kwatt Solutions Pvt.Ltd.  
Providing students an opportunity to meet passionate, committed professionals from industries, the School of Electrical Skills organized an expert lecture on 18 August 2022. Mr. Ron Gulam Hussain, the expert from Kwatt Solutions Pvt. Ltd. deliberated on the importance of Solar Power Plants in the current times supported with various data, facts and figures and also enlightened about the possible job opportunities available in the domain of renewable energy technology. The lecture was followed by a session addressing the queries and curiosities of the students and faculty members.
- Overview of the EV Ecosystem  
The School of Electrical Skills organized an online guest lecture on 9 September 2022 on *Overview of the EV Ecosystem*. Ms. Anupama Godia, the expert from the *Cognition Consultations* introduced students to various factors related to electric vehicles, briefed them on Electrical Vehicles and various other related sectors profiting them.  
In addition, the School also conducted an expert lecture on Transformer Technology delivered by Dr. S.C. Gupta, from Uma Electronics on 23 November 2022.
- Expert Session by Automotive Skill Development Council (ASDC)  
As an initiative towards honing the multiple skills of the students, the School of Automotive Skills conducted an expert session on BS-VI Petrol and Diesel for the students and faculty members by ASDC on 16 December 2022. The expert deliberated on *BS-VI Technology* used in petrol and diesel engine vehicles and also clarified the queries of the young inquisitive minds on the domain of Automotive Service.

## Students' Activities

- Project Exhibition  
The students of the School of Electrical Skills- Ms. Niyatee Smart and Mr. Suraj Bairwa participated and presented their project titled - *Real Time Monitoring and Control in Industrial Automation* in the national level project exhibition "UDBHAV-2022" held at Poornima

Institute of Engineering and Technology on 22 August 2022. The Project was based on industrial automation with the help of PLC and HMI for monitoring and controlling the ongoing industrial process.

- Stellar Performance @ World Skills Competition



It was a moment of pride and honour for the BSDU fraternity to witness the student- Jaikishan Suthar continuing the legacy of representing t India in the most esteemed World Skills Competition held at Basel, Switzerland from 11-15 October, 2022.

In the 46<sup>th</sup> World Skills Competition organized by the World Skills partners and associated members, competitions were held in 62 skill- trades at 29 events in 26 cities spread over 15 nations and regions. Jay kishan Suthar, student of B.Voc 1<sup>st</sup> Semester, School of Woodworking Skills exhibiting his excellence acquired through the Swiss - dual system of training imparted at the state of the art infrastructure at BSDU participated in the Joinery trade. He secured the 11<sup>th</sup> position contending with more than 1,000 competitors participating from various nations.

- World Ozone Day  
To sensitize students towards eco-consciousness, the World Ozone Day was celebrated on 16 September 2022 by the School of Refrigeration and Air Conditioning Skills. On the occasion, a poster making competition was conducted for the students at the RAC workshop. Dr. Sheetal Kumar Jain, In-charge SRACS in his presentation during the event emphasized on preserving the Ozone layer.
- Skill Competition@ National Engineer's Day  
The birthday of the renowned engineer Sri M. Visvesvaraya, declared as National Engineer's Day was celebrated on 15 September 2022 in the School of Electrical Skills. The School organized a competition on *Electrical Installation* which was conducted and coordinated by the students under the guidance of the

trainer Mr. Pawan Choudhary. In all, 9 student- teams from the B. Voc. I, III and V semesters participated in the competition exhibiting their creativity and innovation. Mr. Sulakshan Venugopal, Project Manager, School of Electrical Skills evaluated the performance of the students and the winners were felicitated with trophies and certificates by Dr. Ritu Tak, Principal, School of Electrical Skills.

- **Students' Free -Talk Activity**

Respecting the valuable ideas and opinions of our prime stakeholders i.e. students of BSDU, the School of Automotive Skills organized a Students' Free -Talk Activity to give them a platform to express their experiences and expectations of the University. The activity was held on 10 September 2022 and all the faculty members and students of the School participated in the event. The students' inputs were noted to be suitably considered to benefit them.

- **Industrial Visit**

To provide industrial exposure and to make students aware about workplace safety mechanisms followed in the Industries, the School of Manufacturing Skills organized an Industrial visit for the students of B. Voc. I Semester to RS India, Jaipur on 15 September 2022. Ms. Priya Singh, the Human Resource Manager gave insights about the company's safety mechanisms.

## Extra-Curricular Activities

### Plantation Drive: Inculcating Eco-consciousness



To promote environmental values and institutional social responsibility, BSDU in association with the Viranchi India, Jaipur, conducted a Plantation Drive on 27 August 2022 in the BSDU Campuses wherein

saplings of various fruit-bearing and decorative plants were planted in both the campuses of the University. Mr. Jayant Joshi, the Chief Functionary, RUJCT graced the occasion as Chief Guest in the inaugural event. Mr. Kailsah Chaudhary, MRICS - Managing Trustee, Viranchi India, Mrs. Sangeeta Baplawat - Trustee, Viranchi India, Mrs. Laxmi Singh-Trustee, Viranchi India and other members followed by Dr. Achintya Choudhary- President, Dr. Sandeep Kumar Tomar- Registrar, Prof. Binit Kumar Jha- Principal, School of Manufacturing Skills & Director-IR, staff members and students actively participated in the drive expanding the green spaces of the University.

The Viranchi India group expressed gratitude and profound appreciation for the support and opportunity extended by BSDU for promoting the noble cause.

### Teachers' Day Celebration

*It is the supreme art of the teacher to awaken joy in creative expression and knowledge.*



Commemorating the birth anniversary of the second President of India- Dr. S. Radhakrishnan, also a renowned philosopher, a day-long celebration of the National Teachers' Day was held on 5 September 2022 with great gusto and gaiety by the students of the various Schools of the University.

The students extended a warm welcome to the teachers and greeted them on the special day. A short film was screened on Dr. S. Radhakrishnan's biography followed by the teachers' participation in various fun activities organized by the students viz. Lemon and Spoon- race, Blowing Balloons, Musical Chairs, Task- based games, etc. making the day a memorable one.

As a gesture of respect and gratitude, the students felicitated the teachers with flowers and gifts saluting

their immense contribution in shaping the society. The event ended with high tea and a vote of thanks by the students.

### Activities organized by the School of Computing Skills

- Poster Making Competition

The School of Computing Skills held a Poster Making Competition for the students of the School on the theme- *Life in 2035* on 06 September 2022. A good number of students participated in the competition and the best entries were awarded prizes as mentioned below:

1<sup>st</sup> Position - Manisha Kumawat (B. Voc. V Sem.)

2<sup>nd</sup> Position - Gauri Shankar (B. Voc. I Sem.)

- Speech Competition

Stringing on with activities for students, the School of Computing Skills also held a speech competition on the topic - *Traditional Education Vs Skill Education*. It was highly encouraging to have an overwhelming participation of the students and the following bagged the prizes in the same:

1<sup>st</sup> Position - Govind Kumawat (B. Voc. V Sem.)

2<sup>nd</sup> Position - Tara Kumawat (B. Voc. V Sem.)

- Badminton Competition

The School also hosted a badminton match for the students in the male and female categories on 7 September 2022. The following students won the prizes in the match:

Winner (Boys Team) - Rohit Sharma (B. Voc. I Sem.)

Winner (Girls Team) - Lakshita Jangid (B. Voc. I Sem.)

## BSDU Students' Clubs

### BSDU Students' Clubs –Inaugural Event

Committed towards bringing holistic development of students through the conduct of various co-curricular/ extracurricular activities, BSDU Students' Clubs were formulated and to make the clubs formally functional, a spectacular inaugural of the BSDU Students' Clubs was held on 28 September, 2022 at the aesthetically adorned Quadrangle at the Polymechanic Block of the University.



Dr. Sangeetha Noval, Head, School of General Education in her welcome address detailed about the newly formulated Students' Clubs, and the core committees of faculty and student coordinators as given:

Details of the BSDU Students' Clubs:



S. No	Particulars	Objectives of the Club
1.	<b>KALIDASA</b> The Literary Club	To promote a plethora of literary activities in the University - debates and discussions, honing their writing, reading and critical thinking skills and to enhance confidence of students and prepare them for future challenges.
2.	<b>NAVRASA</b> The Club of Performing Arts	To encourage the budding talents of the students and kindle imagination, create ability and introduce an artistic environment.
3.	<b>VIGOUR</b> The Sports Club	To inculcate love for sports activities and to increase student participation in Sports activities by providing a range of opportunities, support, and resources maintaining a high level of performance in competitions and events.
4.	<b>IMAGERY</b> The Photography/ Videography Club	To motivate students to exhibit their talents in photography and video making and help students express their perceptual, technical and artistic skills.

### Faculty Committee:

Faculty Name	Designation & School
Dr. Sangeetha Noval	Head, SGE
Dr. Kiran Shekhawat	Assistant Professor, SGE
Dr. Rakesh Choudhary	Assistant Professor, SGE
Mr. Anirudh Singh	Senior Trainer, SMS

Mr. Najmool Haque	Trainer, SRAC
Mr. Harendra Singh	Senior Trainer, SWS
Mr. Shankar Singh	Office Executive, SHPS

**Student- Committee:**

Student Name	School & Semester
Niyatee Smart	SES, M.Voc. 3 <sup>rd</sup> Sem.
Aritra Debnath	SHTS, B.Voc. 5 <sup>th</sup> Sem.
Vipul Maheshwari	SMS, B.Voc. 5 <sup>th</sup> Sem.
Mahendra Sharma	SWS, B.Voc. 5 <sup>th</sup> Sem.
Sameer Agarwal	SAS, B.Voc. 5 <sup>th</sup> Sem.
Sanskar Khandelwal	SES, B.Voc. 5 <sup>th</sup> Sem.
Soude Shiva Lingeswar	SWS, B.Voc. 5 <sup>th</sup> Sem.
Deepesh Mittal	SMS, B.Voc. 5 <sup>th</sup> Sem.

The event began with lighting of the lamp by the dignitaries viz. Prof. Achintya Choudhury-President, Mr. Markus Gmeiner- CEO, JCF, all the Project Heads and Principals of various schools. Prof. Achintya Choudhury in his address, stated the importance of students' participation in Club activities that instils confidence in students to perform effectively in their future endeavors.



Mr. Markus Gmeiner in his address, emphasized the importance of students' active involvement in the activities of Students' Clubs as they provide an enriching experience and also an opportunity to showcase their hidden talents and further hone them.

Niyatee Smart, student of M. Voc. Sem. III, School of Electrical Skills and Aritra Debnath, student of B.Voc. Sem. V School of Hospitality Skills compered the event. The event commenced with an enthralling Ganesha Stuti offered in the form of Bharathnatyam dance by Ms. Vishalu, student of B. Voc. I Sem, School of Woodworking Skills.



Various cultural activities were performed by the students of the University. A heart throbbing dance in the contemporary style choreographed by the student - Vipul Maheshwari, B.Voc. V Sem. was performed by students. An energetic and a rocking Garba performance choreographed by Niyatee Smart added to the spirit of Navaratri celebrations. A spell binding medley of songs sung by a group of students on the tracks of karaoke was led by Virat Tiwari, student of B. Voc. III Sem., School of Computing Skills. In addition to the students' performances, the faculty members added to the spirit and enthusiasm of the event with their mesmerizing dance performances in Rajasthani, Punjabi and contemporary style.



The event was successfully organized with the concerted efforts of the faculty and student coordinators of the BSDU Students' clubs. The vote of thanks proposed by Dr. Sangeetha Noval was followed by high tea.



## Activities conducted under the aegis of the

### BSDU Students' Clubs:

- Poster Making Competition

Under the aegis of **BSDU Student's Club, Navrasa- The Club of Performing Arts** Poster Making Competition was organized on 19 October 2022 on the following themes:

- a. Azadi Ka Amrit Mahotsav -India's Journey: 1947 to 2022
- b. Digital India
- c. Life on Moon @ 2050

More than 20 B.Voc Students participated in the event showcasing their creativity and artistic skills. The student and faculty coordinators of the *Navrasa Club* coordinated the conduct of the event. The following students bagged the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> prizes:

S.No	Name	Sem.	School	Position
1.	Vikash Sharma	V	SAS	1 <sup>st</sup>
2.	Mahendra Sharma	V	SWS	2 <sup>nd</sup>
3.	Aditya Narayan	I	SCS	3 <sup>rd</sup>

### PARAKRAM 2022 – The 4<sup>th</sup> Edition of the Annual Sports Championship

Taking yet another stride to promote discipline, develop confidence, and inculcate team spirit & accountability, the 4<sup>th</sup> Annual Sports Championship of the University- *Parakram 2022* was held successfully from 9 - 12 November 2022 in the sprawling campuses of BSDU. The Championship under the aegis of the BSDU Sports Club- *Vigour* began on 9 November 2022 with the *BSDU Run* (beginning point- RS India Pvt. Ltd., finishing point- BSDU, Old Campus) which witnessed an overwhelming participation from the students.



The *BSDU Run* was followed by the grand Inaugural Ceremony of the Annual Sports Championship at the Quadrangle, Poylmechanic Block. Mr. Jayant Joshi, the Chief Functionary, RUJCT, Dr. Sandeep Tomar, Registrar, BSDU and other Heads & Principals graced the occasion. Mr. Jayant Joshi in his address highlighted the importance of Sports and motivated the students to actively participate in the event.



After the Sports Championship being formally declared open by Mr. Jayant Joshi, the final rounds of the Badminton matches in the Boys and Girls categories were played. Other sports events like Kabaddi, Cricket, Athletics, Basketball, Volleyball and various other indoor sports events were held as scheduled.

The winners and runners-up of the various sports events held during the week under the Male and Female categories were awarded with medals and certificates in the valedictory ceremony held on 12 November 2022.



The faculty and coordinators of the event were awarded with certificates of appreciation for aiding in the smooth conduct of the event. Out of the four teams- Jaguars, Cheetahs, Panthers and Cougars, the team *Cheetahs* won the qualifying round of the high spirited volleyball match held during the valedictory event. Giving a tough competition to the Cheetahs, Cougars and Panthers in various sports activities, the team *Panthers* bagged the

trophy of the 4<sup>th</sup> edition of the Annual Sports Championship- PARAKRAM 2022.



The details of the winners in various sports events are as given below:

Individual Sports Events			
Chess (Male)			
Position	Name	School	Sem.
Winner	Nishant Kumar	SWS	B.Voc.- V
Runner-up	Himanshu Jangir	SWS	B.Voc.- V
Chess (Female)			
Position	Name	School	Sem.
Winner	Niyatee Smart	ELE	M.Voc III
Runner-up	Tara Kumawat	SCS	B.Voc.- V
Carrrom (Male)			
Position	Name	School	Sem.
Winner	Soude Shiva Lingeshwar	SWS	B.Voc.- V
Runner-up	Vipul Maheshwari	SMS	B.Voc.- V
Carrrom (Female)			
Position	Name	School	Sem.
Winner	Shilpi Rekha	SCS	B.Voc.- I
Runner-up	Astha Choudhary	SCS	B.Voc.- V
Table Tennis (Male)			
Position	Name	School	Sem.
Winner	Soude Shiva Lingeshwar	SWS	B.Voc.- V
Runner-up	Shubham Kumawat	SCS	B.Voc.-I
Table Tennis (Female)			
Position	Name	School	Sem.
Winner	Vishalu M. Mathad	SWS	I
Runner-up	Niyatee Smart	ELE	M.Voc III
Badminton (Male)			
Position	Name	School	Sem.
Winner	Abhishek Kumar	SMS	B.Voc.- V
Runner-up	Vipul	SMS	B.Voc.- V
Badminton (Female)			
Position	Name	School	Sem.
Winner	Vishalu M. Mathad	SWS	B.Voc.- I
Runner-up	Shilpi Rekha	SCS	B.Voc.- I
Athletics Event			

100m (Male)			
Position	Name	School	Sem.
Winner	Chandraprakash Sharma	AUT	B.Voc.- I
Runner-up	Vipul Maheswari	SMS	B.Voc.- V
100m (Female)			
Position	Name	School	Sem.
Winner	Chanchal Kumari	ITN	B.Voc.- I
Runner-up	Priya Rajput	SHP	B.Voc.- V
200m (Male)			
Position	Name	School	Sem.
Winner	Jitendra Choudhary	AUT	B.Voc.- I
Runner-up	Vipul Maheshwari	SMS	B.Voc.- V
200m (Female)			
Position	Name	School	Sem.
Winner	Shilpi Rekha	ITN	B.Voc.- I
Runner-up	Chanchal Kumari	ITN	B.Voc.- I
400m (Male)			
Position	Name	School	Sem.
Winner	Vipul	SMS	B.Voc.- V
Runner-up	Kishan Lal Prajapat	SHTS	B.Voc.- I
400m (Female)			
Position	Name	School	Sem.
Winner	Shilpi Rekha	ITN	B.Voc.- I
Runner-up	Chanchal Kumari	ITN	B.Voc.- I
1600m (Male)			
Position	Name	School	Sem.
Winner	Jitendra Choudhary	AUT	B.Voc.- I
Runner-up	Kishan Lal Prajapat	SHTS	B.Voc.- I
1600m (Female)			
Position	Name	School	Sem.
Winner	Chanchal Kumari	ITN	B.Voc.- I
Runner-up	Shilpi Rekha	ITN	B.Voc.- I
Shot Put Throw (Male)			
Position	Name	School	Sem.
Winner	Abhishek Kumar	SMS	B.Voc.- V
Runner-up	Chandraprakash Sharma	AUT	B.Voc.- I
Shot Put Throw (Female)			
Position	Name	School	Sem.
Winner	Sneha Kashyap	SHTS	B.Voc.- I
Runner-up	Priya Rajput	SHPS	B.Voc.- V
Javelin Throw (Male)			
Position	Name	School	Sem.
Winner	Chandraprakash Sharma	AUT	B.Voc.- I
Runner-up	Hemraj Khoja	SES	B.Voc.-III
Javelin Throw (Female)			
Position	Name	School	Sem.
Winner	Monu Vaishnav	SHPS	B.Voc.- V
Runner-up	Manisha Prajapat	SCS	B.Voc.- V
Discus Throw (Male)			
Position	Name	School	Sem.
Winner	Abhishek Kumar	SMS	B.Voc.- V
Runner-up	Vaibhav	RAC	B.Voc.- III
Discus Throw (Female)			
Position	Name	School	Sem.
Winner	Tara Kumawat	SCS	B.Voc.- V

Runner-up	Manisha Prajapat	SCS	B.Voc.- V
<b>Long Jump (Male)</b>			
<b>Position</b>	<b>Name</b>	<b>School</b>	<b>Sem.</b>
Winner	Jitendra Choudhary	AUT	B.Voc.- I
Runner-up	Ajay Kumar	SES	B.Voc.- I
<b>Long Jump (Female)</b>			
<b>Position</b>	<b>Name</b>	<b>School</b>	<b>Sem.</b>
Winner	Priya Rajput	SHP	B.Voc.- V
Runner-up	Monu Vaishnav	SHP	B.Voc.- V
<b>Team Events</b>			
<b>Cricket</b>	Panthers		
<b>Basketball</b>	Jaguars		
<b>Kabaddi</b>	Panthers		
<b>Volleyball</b>	Cheetahs		
<b>Marathon</b>			
Jitendra Choudhary (ELE 3 <sup>rd</sup> Sem)			
<b>Winner of the PARAKRAM -2022</b>			
<b>Team Panthers</b>			

12	Dr. Rakesh Choudhary	Member	Assistant Professor	SGE
13	Mr. Rajesh Saini	Member	IT Manager	IT & Infra
14	Mr. Hemraj Yadav	Member	Finance Executive	Finance

### Workshop on Entrepreneurship & Innovation as Career Opportunity

With an objective to promote entrepreneurship and to acquaint them with core employability skills, innovation and creativity as career opportunities, a workshop in online mode was organized on 10 September 2022 highlighting the latest trends in industry and the desired employability skills. The leading Experts - Mr. K.N. Vivekananda, Director, JLL, IFM & PM Business, Bengaluru and Mr. Kailash Choudhary, General Manager, CBRE South Asia Pvt. Ltd. Hyderabad in their interaction with students gave insights about the crucial role of creativity and innovation in entrepreneurship including the skill ecosystem.

### Exposure & Field Visit for Problem Identification

The Institution's Innovation Council, BSDU under the aegis of the Ministry of Education, Govt. of India, organized a field visit on 14 September 2022, for identifying the problems faced in the operations at the 132KV Gas Insulated Hybrid Grid Substation, Jaipur - the first hybrid substation model in Rajasthan.



The students and faculty members of the Schools of Electrical Skills and Renewable Energy Technology Skills interacted with the Key stakeholders- Ms. Taranum (Assistant Engineer), Ms. Pushpa Shrivastava (Junior Engineer) and Ms. Garima Sharma (Junior Engineer) briefed about the various equipment of the substation and their working and functions and also to identify the real life problems in the operations of the substation and their solutions.

### Activities @Institution's Innovation Council

Aiming to foster innovation and developing a conducive eco-system, the Institution's Innovation Council of the University comprising the following members held various activities:

S No	Name	Role	Designation	Department / School
1	Dr. Ritu Tak	President	Associate Professor	SES
2	Dr. Binit Kumar Jha	Vice - President	Professor	SMS
3	Dr. Sunil Anand	Innovation Activity Coordinator	Associate Professor	SAS
4	Dr. Satyendra Singh	IPR Activity Coordinator & Convener	Assistant Professor	SES
5	Dr. Sekhar Kapoor	Internship Activity Coordinator	Training & Placement Officer	TPO
6	Dr. Sheetal Kumar Jain	ARIIA Activity Coordinator	Assistant Professor	SRAC
7	Dr. Sumitra Singar	Start-up Activity Coordinator	Assistant Professor	SCS
8	Dr. Ritu Tak	NIRF Coordinator	Associate Professor	SES
9	Dr. Bhoop Singh	Social Media	Assistant Professor	Library
10	Dr. Shaikh Juned Saoud	Member	Deputy Registrar	Admin
11	Dr. Kunjee Lal Meena	Member	Associate Professor	SWS



### **Session on Intellectual Property Rights and IP Management for Educational Institutions**

The Institution's Innovation Council, BSDU in collaboration with the Ministry of Commerce and Industry under the MIC Self-Driven activities of IIC India, organized an expert session on Intellectual Property Rights and IP Management for Educational Institute on 22 September 2022

The expert, Mr. Manish Soyal- examiner of Patents & Designs, Intellectual Property Right, New Delhi, India deliberated on the subject in the session attended by more than 100 participants. Mr. Soyal highlighted the various aspects of IPR, such as patents, copyrights, trademarks, etc. He shared the requisites viz. the subject matter for patent, documents required for getting patents, kinds of patent applications, time-line of patenting and laws of the patent. The expert was felicitated with a memento by the President, BSDU Jaipur.

### **Session on Problem Solving and Ideation Workshop:**

The Institution's Innovation Council, BSDU under the calendar activities of IIC India, organized an expert session on *Problem Solving and Ideation* Workshop at the New Campus on 1 October 2022. More than 35 participants attended the session collaboratively conducted by Innovation and Start-up coordinators. The session focussed on Ideation, Out of Box Thinking and Idea Generation on Problems. Dr. Sunil Anand, Principal, School of Automotive Skills deliberated over Ideation and Idea Generation on problems, followed by a session on out of box thinking by Dr. Sumitra Singar, Assistant Professor, School of Computing Skills.

### **Screening of the Inaugural Event of 5G Technology**

The Institution's Innovation Council, BSDU screened the inaugural of *5G Technology* launched by the Hon'ble Prime Minister of India- Shri Narendra Modi on 1 October 2022 in the University enabling the students and faculty members of the School of Electrical Skills to witness the grand inaugural ceremony.

### **Motivational session on My Story**

Fostering an entrepreneurial spirit in the students of the University, the Institution's Innovation Council, BSDU organized a motivational session- *My Story* on 8 October 2022. Successful entrepreneurs and founders of start-ups viz. Dr. Anoop Keswani, Chairman, ARK Overseas, Mr. Runal Keswani, Chairman, Ace Exim, Mr. Harshit Agarwal, MD, Nessco India Pvt. Ltd., Mr. Ankit Gupta, MD, Swastil Dynamics Pvt. Ltd. and Mr. Krishan Kumar, R&D Head, Nessco India Pvt. Ltd. shared their inspiring stories of struggle in the course of establishing their entrepreneurial ventures in the session, motivating more than 50 participants with their expertise and experience.

Dr. Anoop Keswani, Chairman, ARK Overseas emphasized on work- consistency being a key factor in achieving the goals. Mr. Harshit Agarwal, MD, Nessco India Pvt. Ltd., focussed on defining goals in life aided with perseverance to be successful. Mr. Ankit Gupta, MD, Swastil Dynamics Pvt. Ltd., mentored students about being positive and patient during upheavals in the business ventures. Mr. Runal Keswani, Chairman, Ace Exim, elaborated on effective utilization of time and also motivated students to focus on their goals. Mr. Krishan Kumar, R&D Head, Nessco India Pvt. Ltd. shared his success story about a major project he had undertaken emphasizing on the importance of time management in student's life.

### **Innovation Day Celebration**



Honouring the birth anniversary of the incredible scientist and former President of India, the Institution's Innovation Council, BSDU Jaipur on 15 October 2022 celebrated the Innovation Day- *Remembering Missile Man of India* benefitting more than 100 participants. The resource persons of the event, Provost, BSDU- Col.

Raj Kumar, IIC President, BSDU- Dr. Ritu Tak, IIC Innovation coordinator- Dr. Sunil Anand deliberated on the importance of innovation. Dr. Ritu Tak in her session on *Remembering Missile Man of India* on his birth anniversary urged students to practice the basic nature of possessing the exemplary simplicity & humility Dr. Kalam had. Col. Raj Kumar in his session emphasized the importance of innovation and motivated students to be creative and innovative, and also highlighted the importance of Out of Box Thinking, Domain Knowledge, Challenge Identification and Collecting Ideas, Validating, Implementing and Scaling, measuring the efforts, continuous learning, etc. Innovative ideas of the selected students were appreciated and certificates were awarded recognizing their novelty.

### **Celebration of the National Education Day**

The Institution's Innovation Council, BSDU Jaipur under the aegis of the Ministry of Education, Govt. of India celebrated the National Education Day on 29 November 2022. The expert- Dr. Shaikh Juned, Deputy Registrar BSDU gave an overview on the *Impact of NEP 2020 and opportunities for Stakeholders*. Dr. Juned emphasized the core values of the New Education Policy 2020. He appreciated the NEP with special reference to restructuring of higher educational institutions helping students and scholars. He emphasized on the coordination required to be built between the stakeholders and massive consultation & designing of a work plan necessary to design road maps for implementation of NEP 2020.

### **Workshop on Entrepreneurship Skills, Attitude and Behaviour Management**

An online workshop on Entrepreneurship Skills, Attitude and Behaviour Management was conducted for the students of the University and other budding entrepreneurs on 8 December 2022. The invited resource persons were - Mr. Kailash Chaudhary, General Manager, Project Management Group, CBRE at Hyderabad, Mr. Swapan Kr. Panda, Head, Projects at Shapoorji Pallonji Group, Mumbai and Mr. Brigneshwar

Swain, Vice President, Mining, Operations and Processing at the Golecha Group, Jaipur. The Registrar, BSDU, Dr. Sandeep Kumar Tomar welcomed the eminent guests and extended the inaugural address.

Mr. Kailash Chaudhary showcased his presentation and expressed the important aspects necessary for entrepreneurial growth and mind-set. He laid importance on aspects like emotional intelligence, problem solving and risk taking as key ingredients for developing entrepreneurial skill and attitude. Mr. Brigneshwar Swain motivated students by laying emphasis on personality development, cognitive skills and vision by quoting various examples from his professional journey and mapping them with the changing industrial needs. Mr. Swapan Kumar Panda emphasized over management skills and soft skills being crucial for success. Dr. Ritu Tak thanked the speakers and encouraged the students to accomplish their goals in life.

### **Project Exhibition @ BSDU**

The Institution's Innovation Council of BSDU Jaipur, organized a Project Exhibition on 21 December 2022. The students of BSDU and students (VIII-XII std.) from various reputed School of Jaipur exhibited the innovatively designed projects. The honourable chief guest, Mr. Jayant Joshi in addition to the dignitaries of the University, faculty members and students attended the mega event.



Tapping the innovative potential of students, the exhibition provided them a platform for showcasing their innovative projects focussed on Industry-Defined Problems/ User-Defined Problems, thereby rendering them a priceless confidence and a great learning experience. The jury identified the best projects

displayed by the various teams from BSDU and School students and the following winners were felicitated by the Registrar BSDU Dr. Sandeep Kumar Tomar:

Winners (BSDU Students)			
Position	Student/s Name	Name of the School	Project
1 <sup>st</sup>	Govind Kumawat	School of Computing Skills	Smart E-book
2 <sup>nd</sup>	Abhishek Kumar and Vishnu Sharma	School of Manufacturing Skills	3D Printer
Winners (School Students)			
Position	Student/s Name	Name of the School	Project
1 <sup>st</sup>	Tanish Sharma	Maheshwari Public School, Bagru	AI Remote Assistant
2 <sup>nd</sup>	Adharv Shine, Vikash Bairwa, Multan Singh Medtiya and Clement Cherian	Maheshwari Public School, Bagru	Automatic defence Mechanism for Army
3 <sup>rd</sup>	Rohit Choudhary	Redcliffe Group of Schools	Periscope

## Research & Development

### Patent

Name of the Patent	Name of the Faculty/Scholar	Application No.
An Artificial Intelligence And IoT Based System For Regenerative Medicine for The Treatment of Life Threatening Diseases and Working Methods Thereof	Mr. Rajeev Sharma	20224106

### Research Papers Presented in Conferences/

#### Seminars/Symposia

Presenter's Name	Title of the Paper	Name of Conferences/ Seminars/Symposia	Venue & Date
Niyatee Smart, Pancham Kumar, Mahipal Bukya	Cost-Beneficial Designing and Environmental Safety Measures Using Solar Photovoltaic System	Recent Advances in Modeling and Simulation Techniques in Engineering and Sciences [RAMSTES-2022]	Manipal University Jaipur, November 9-11, 2022
Dr. Vipin Pahuja	A Review on Advancement, Challenges	3 <sup>rd</sup> Biennial International Conference on Future Learning Aspects of	Amity University, Noida

	and Applications of Thermionic Energy Conversion	Mechanical Engineering (FLAME - 2022)	August 3-5, 2022
Pushpa Koranga, Sumitra Singar and Sandeep Gupta	A comparative Analysis of Single Image Dehazing Techniques for Real Scene	3 <sup>rd</sup> International Conference on Sustainable Expert Systems" (ICSES - 2022)	Tribhuvan University, Nepal September 9-10 2022
	Removal of Haze from Real and Synthetic Scene Using Deep learning and other Techniques	International Conference on Recent Advancements in Artificial Intelligence (ICRAAI-2022)	Poornima University, Jaipur December 22-23, 2022
Pooja Sharma	A Study Of Factors Influencing Service Quality Of Education In Conventional Universities	National Multidisciplinary Conference On Innovations, Research & Challenges In Global Business, Finance, Economics, Social Sciences And Applied Sciences	SSG Pareek PG Girls College, Jaipur, November 11-12, 2022
	A Comparative Study Of Service Quality Of Education In Skill And Conventional Universities: A Study Of Selected Factors	International Multidisciplinary Conference On Innovations, Research And Challenges In Current Global Scenario (ICIRC)	Kaveri Group of institutes Pune, August 26-27, 2022

### Research Papers/Chapters/Book Published

Author/s	Title of the Paper/Chapter/Book	Publisher/ Journal
Rajeev Sharma, Binit Kumar Jha, & Vipin Pahuja	Application of Taguchi Coupled with Genetic Algorithm (GA) for Optimizing Surface Quality in Drilling of Duplex Stainless Steel 2205	Journal of Process Mechanical Engineering & SAGE, 0954-4089
	Parametric Optimization on Drilling DSS 2205 Through Multi-Objective TOPSIS Under Sustainable Machining	Nano World Journal, 2379-1101

	Modeling of Process Parameters on DSS 2205 through RSM, ANN, Fuzzy Under Cryo-MQL Process	Journal of Physics, 1742-6588
	Application of RSM and ANN for the prediction and optimization of the circularity error of DSS 2205 under hybrid cryo-MQL process.	Journal of Xi'an Shiyu University, Natural Science Edition, 1673-064X
M. Sheoran, Pancham Kumar, S. Sharma, Mahipal Bukya	After Life Cost Modelling of 160 kW Grid Integrated Solar Photovoltaic Plant: BSDU Jaipu	Flexible Electronics for Electric Vehicles, Springer, 2022, Vol-863, pp. 193-199
Mahipal Bukya, Pancham Kumar, Rajesh Kumar	On-Grid Solar Photovoltaic Power Plant Analysis Under Pvsyst Simulation Software Platform	Flexible Electronics for Electric Vehicles, Springer, 2022, Vol. 863, pp. 419-425
Pancham Kumar, Manisha Sheoran, Anupam Agrawal, Amit Soni, Jagarti Sahariya	End Life Cycle Cost-Benefit Analysis of 160 kW Grid Integrated Solar Power Plant	Energy Conversion and Green Energy Storage, CRC Press, ISBN- 9781003 258209
Dr. Prerna Srivastava & Dr. Sangeetha Noval	Book Chapter- Postmodern Praxis in Literature	Prestige Books International, ISBN978-81-956029-0-2., 2022
Vinay Kumar Verma/ Kiran Shekhawat	Hoteliers in Rajasthan's Understanding and Manner towards Sustainable Food Waste Management	Journal of Xi'an Shiyu University Volume 18 Issue 8 SSN : 1673-064X Pg. 551-555 August 2022
Parveen Parihar & Rakesh Choudhary	Quality Assessment of Composts from different Organic sources	IOP Conference Series: Earth and Environmental Science (Vol. 1084, No. 1, p. 012070)
	Influence of organic waste on nutrient composition of compost and the impact of sawdust on the composting process	Current World Environment
Nigam Megha Umesh & Sangeetha Noval	Student's Behavioral Intention in Social Media Platforms	3 <sup>rd</sup> International Conferences on Emerging Trends in Multidisciplinary Research "ETMDR-2022" Pg. 20-29, ISBN 978-93-5593-524-3 , January - 2022 (Conference Proceeding)

	Marketing in Higher Education Through Social Media	International Journal of Early Childhood Special Education (INT-JECSE), Pg. 3197-3202, Volume 14 No 3 (2022), ISSN: 1308-5581, (Indexed in Web of Science and ESCI)
	A Systematic Review on Evaluating the Influence of Social Media Marketing in Higher Education in Current Scenario & Future Implications using the PRISMA Model	Mathematical Statistician and Engineering Applications ,P g - 300-320, Vol. 71 No. 3 (2022) ISSN: 2326-9865, (Indexed in Scopus)
	Study of Social Media And Higher Education to Find Future Scope Of Research: A Literature Review	Journal Of Management & Entrepreneurship Pg.52-58, Vol. 16, No.2 (VII) ISSN-2229-5348 (Indexed in UGC)
Lala Ram Choudhary & Prerna Srivastava	Educational Tourism: A New Concept of Sustainable Development of Tourism	Baltic Journal of Special Education-Specialusis Ugdymas, ISSN - 1392-5369, VOL, 1 NO. 43 (2022) (Scopus Indexed)
	The Groundswell in Agri-Tourism: The Road Ahead	Baltic Journal of Special Education-Specialusis Ugdymas, ISSN - 1392-5369, VOL, 2 NO. 43 (2022) (Scopus Indexed)
	A Case Study on Educational Tourism in Rajasthan	Neuro Quantology ISSN -1303-5150, VOL, 20 issue-17 (2022) (Scopus Indexed)
R. B. Agrawal & Prerna Srivastava	Exploring Factors Affecting Non-Performing Assets of Small and Marginal Farmers: Bankers Perspective	Baltic Journal of Special Education-Specialusis Ugdymas ISSN - 1392-5369, VOL, 2 NO. 43 (2022) (Scopus Indexed)
Pooja Sharma, Manvinder Singh Pahwa, Kiran Shekhawat and Ravi Kant Modi	A Literature Review: Service Quality Enhancement in Higher Education	International Journal of Innovations & Research Analysis (IJIRA) ISSN :2583-0295, Impact Factor: 5.449, Volume 02, No. 04(II), October-December, 2022, pp 101-109

## Human Resource Department

Committed towards fostering excellence through faculty recruitments, suitably re-designating them, enabling employees develop their potential through FDP's and taking measures towards maintaining a genial climate at the University, various activities and events were held by the Department of Human Resource.

Details of recruitments, re-designations and additional responsibilities:

### New Joining: July 2022-Dec 2022

S.No.	Name	Designation	Date of Joining
1	Dr. Kunjee Lal Meena	Associate Professor & Officiating Principal	01.07.2022
2	Dr. Shaikh Juned Saoud	Deputy Registrar	14.07.2022
3	Dr. Sandeep Kumar Tomar	Registrar	26.07.2022
4	Mr. Deepak Kumar Jajoriya	Junior Trainer	08.08.2022
5	Ms. Jyoti Sharma	Office Assistant	22.08.2022
6	Mr. Avneet	Junior Trainer	01.09.2022
7	Mr. Girraj Prasad Soni	Executive Examinations	01.09.2022
8	Ms. Priyanka Rathore	Junior Trainer	15.09.2022
9	Mr. Yaduvendra Singh Rawat	Trainer-II	06.09.2022
10	Mr. Tarun Ranwa	Junior Trainer	08.09.2022
11	Mr. Jitendra Kumawat	Office Executive	20.09.2022
12	Mr. Sunil Kumar Naga	Junior Trainer	06.10.2022
13	Mr. Bajrang Lal Choudhary	Executive-Admissions	01.11.2022
14	Mr. Lala Ram Gurjar	Assistant Hostel Supervisor	01.11.2022
15	Mr. Mausam Vyas	Senior Admission Counselor	28.11.2022
16	Ms. Soniya Sharma	Admission Counselor	01.12.2022
17	Ms. Tripti Sharma	Hostel Warden (Girls Hostel)	05.12.2022
18	Dr. Prakhar Kumar Kharwar	Assistant Professor-I	20.12.2022

### Re-Designations

S. No	Name	School/ Department	Re-designation
1	Mr. Jitendra Kumar Piploda	Administration	Care- Taker (Ashiana Umang) to Administrative Assistant

### Additional Responsibilities

S. No	Name & Designation	School/ Department	Additional Responsibility
1	Mr. Gori Shankar Soni, Trainer-I	Construction Skills	Purchase section In-charge, Sports In-charge
2	Dr. Shaikh Juned Saoud, Deputy Registrar	Administration	Security, Housekeeping, Hostel, Guest House & Mess, coordinating with Head-Admissions with regards to marketing and promotional activities of the University.
3	Mr. Om Prakash Shrimal, Trainer-I	Healthcare and Paramedics Skills	In-charge, School of Healthcare & Paramedics Skills.
4	Mr. Hemraj Jat, GDW	Administration	Night- Shift Driver.

### Celebrations & Events

#### • Faculty Development Programme



As a measure towards bringing a positive change by enhancing the academic and intellectual environment in the organization, an FDP was organised on 24 September 2022 by the HRO on *Transactional Analysis for Effective Interpersonal Relations*. Enabling effective interpersonal relations at all levels of the organization *vis-a-vis* the interplay of three ego states, transactions, life script analysis and patterns of games people play, the resource person - Dr. Tanjul Saxena, Principal and Professor, Mahatma Gandhi College of Hospitals conducted highly informative and engaging sessions on self-analysis. The activity helped the participants to recognize the importance of interpersonal communication skills and dynamics of Transactional Analysis.

#### • Diwali Celebration

Diwali, one of the most auspicious and awaited festivals was celebrated with great zeal and enthusiasm on 21 October 2022 at the University. Dr. Sandeep Kumar Tomar, Registrar invoked the Goddess Mahalakshmi

with an auspicious Hawan held at the Quadrangle of the Polymechanic block followed by Aarti.



All the employees of the University as a family participated in the Pooja celebrating the festival blended with a spiritual fervour.



Marking the occasion, all the employees were adorned in ethnic- traditional wear complementing the divinity radiated by the Hawan & Pooja held. The overwhelming participation of the employees in the *Rangoli Competition* and *Best Traditional Attire* added to the celebratory spirit and the winners of both the competitions were awarded prizes by the Registrar.

The Registrar on behalf of the management extended Diwali greetings to all the BSDU employees & their families. The celebration was followed by high tea and distribution of sweets.

- Christmas Celebration

*"Jingle Bell, Jingle Bell, Jingle all the way"*



Embracing the spirit of festivity, the Christmas Day was celebrated in a celebratory manner at the University on 24 December 2022. All the employees dressed in Reds

and Whites gathered in the beautifully decorated venue at the Polymechanic block. A huge Christmas tree adorned with lights, artificial stars, toys, bells, flowers, gifts, etc. added to the merriment and festive fervour.

The employees enjoyed the festive music, the fun and frolic and also savoured the scrumptious cupcakes in lip-smacking flavours prepared by the students and faculty members of the School of Hospitality Skills under the guidance of the Project Manager- Ms. Marietta Nueslli.

The zealous participation of the employees in the celebration entailing meticulous preparations made the evening memorable.

## Training & Placement Cell

The Training and Placement Cell, an integral part of the University provides a platform to facilitate interactions between the students and recruiters to match the aspirations of the students and the expectations of the recruiters. In addition, the T&P Cell provides the much needed training to hone students' employability skills enabling them to crack the aptitude test, group discussions and interviews, and aids students in exploring career opportunities in the prevailing skill ecosystem.

The T&P Cell comprises the following members:

Name	Role
Prof. Binit Kumar Jha	Director, Industrial Relations
Dr. Shekhar Kapoor	Training & Placement Officer
Dr. Vipin Pahuja	Placement Coordinator, SAS
Mr. Anirudh Singh	Placement Coordinator, SMS
Mr. Sultan Singh	Placement Coordinator, SOAS
Mr. Jitendra Mathur	Placement Coordinator, SCS
Mr. Najmool Haque	Placement Coordinator, RAC
Dr. Shekhar Kapoor	Placement Coordinator, S Ent.S
Mr. Harendar Singh	Placement Coordinator, SWS
Mr. Bhagwan S. Bunkar	Placement Coordinator, SWSMS
Mr. Om Prakash	Placement Coordinator, SHPS
Mr. Yaduvendra Singh	Placement Coordinator, SES
Mr. Vinay Kumar Verma	Placement Coordinator, SHTS

## Major Recruiters

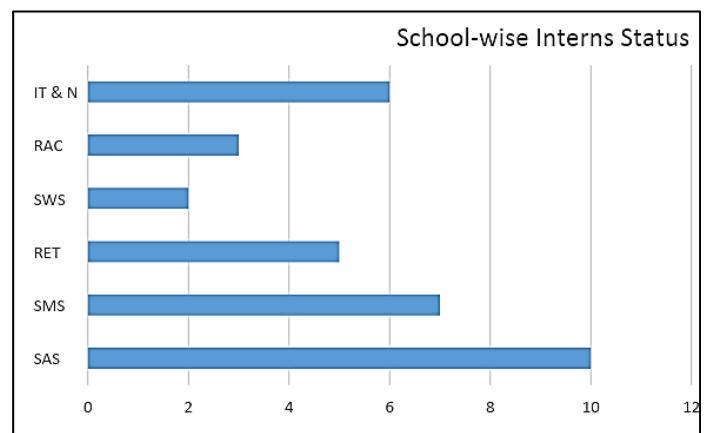
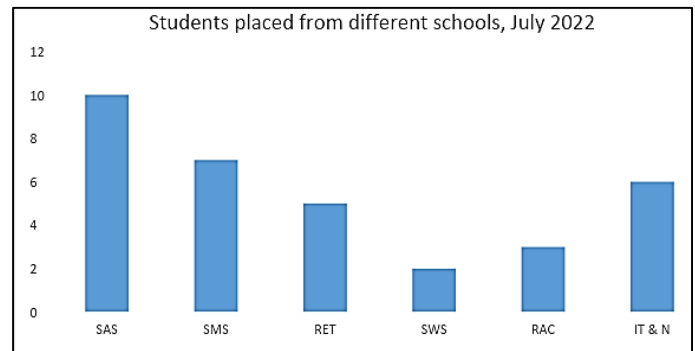
Mahindra Group	Havells India Ltd.	Jasubhai Engineering, Gujarat
Hero MotoCorp Ltd.	Infosys	Hotel Raddisson
Daikin Industries Ltd.	Millbon Switchgears Pvt. Ltd.	ITC Group of Hotels
JCB India Ltd.	RML Switchgears Pvt. Ltd.	Sarovar Premiere
Perto India Pvt. Ltd.	Insolation Energy	Justa Sajjangarh Resorts
Genus Power Infrastructures	Forbes Marshall	Ahuja Overseas
Nidec India Pvt. Ltd.	Force Motors	Soni Group of Hospitals
HMT Machine Tools Ltd.	SolarMax	Fortis Hospital
Bosch Ltd.	Grace Industries	Doozydoc Homecare
Godrej & Boyce	Ecomitron	Caresathome Care
Tata Motors	Somani Group of Industries	Tweaking Technologies
Honda Cars India Ltd.	Keshav Industries	Chokhi Dhani Foods
Eureka Forbes	Tesca Technologies	Nessco India Ltd.
BYJU's	Classic Signages	Rama Aircon Pvt. Ltd.
KTL Automotive Pvt. Ltd.	Austefix Surgicals Pvt. Ltd.	Orvi Design Studio
Y2K Engineers	Ratan Green Energy Pvt. Ltd.	Vedansh Infraenergy Pvt. Ltd.
Manu Solar Pvt. Ltd.	Aha 3D Innovations Pvt. Ltd.	Mariott Hotels
Paliath Interiors	A&D International Pvt. Ltd.	Bram Woodcrafting Studios
RS India	Pink City Honda	RUJ Woodcraft
Hindustan Copper Ltd.	ARKO Business Group	Suzuki Motors
Ensol Multiclean Pvt. Ltd.	Continental Cooling Pvt. Ltd.	Dr. B.Lal Path Labs
Hyatt Regency	Pink City Honda	Fern Ecotel Hotel & others.

## Internships & Placements

The Training & Placement Cell of the University placed 129 students in various companies like Mahindra, Pink City Honda, RS India, Paliath Interiors, Bram Woodworking Studio, Genus Group, NESSCO India, ITC Welcome Hotels, Ratan Green Energy, Rama Aircon Engineers, Ahuja Overseas and placed 33 students of the second, fourth and the sixth semesters for internships in the organizations videlicet - Mahindra, Skoda, Narsi Interiors, JCB, Genus Power Infrastructures, Viha Services, HMT, RS India, Alisha

Torrent Closures Ltd. VariableSoft, DoozyDoc Home Care, Hotel Crown Plaza, Hotel Royal Orchid during the Summer Semester- July 2022 to December 2022.

## Graphical representation of Placements:



The students of the University participated in the Group Discussions and faced various rounds of interviews as a part of the selection process. Opting to pursue higher education, a few students after completing their B. Voc. in ML&AI Skills and Manufacturing Skills sought admission in the final year of the B.Tech Programme (as a provision mentioned in the AICTE Approval Process Handbook 2022-23) offered by other Universities.

## Activities Conducted

- Mini Job Fair



In association with the Department of Employment, Govt. of Rajasthan, a mini Job Fair was organized for

the passed-out students on 22 July 2022. Esteemed companies such as JCB India Ltd., Mahindra & Mahindra Ltd., Soni Group of Hospitals, Hotel Radisson, Daikin and Pukhraj Healthcare Pvt. Ltd. participated in the event. The inaugural address was extended by Prof. B.K. Jha - Director Industrial Relations, BSDU. The HR Head - Mr. Girish Sharma, District Employment Officer - Mr. Harish Nainakwal, BSDU President - Prof. Achintya Choudhury, Chief Administrative Officer, Soni Hospitals - Mr. Rajkumar and the Branch Head, Pukhraj Healthare - Mr. Kuldeep Singh deliberated in the event. The event benefited the students as 13 of them were selected by M&M, 15 were shortlisted by JCB India Ltd., 5 were selected by Soni Group of Hospitals and 4 students by Pukhraj Healthcare Limited.

- Pre-Placement Talks and Recruitment Drives

The pre -placement talks and the interview process for the internships and placements were conducted for the students in both offline and online modes. Group Discussions and Personal Interviews were held for students by some of the companies, while others like HMT, RK Business Group, RS-India, Aha 3D and others screened the students through personal interviews.

- SuryaCon Conference, Mini Expo & Rajasthan State Solar Awards

Dr. Shekhar Kapoor- TPO, BSDU, Dr. Ritu Tak- Principal, SES and Dr. Satyendra Singh- Asst. Professor, SES with few students of RET participated in SuryaCon Conference, Mini Expo & Rajasthan State Solar Awards on 15 September 2022. The conference was attended by region's leading companies in commercial & industrial space in addition to the Solar Industry such as EPC, Tech Providers, O&M companies, Financiers and investors, Government Officials & Policy Makers, Discom's, Developers, IPP's, Leasing & Renting Companies, Consultants & Advisors, Local Distributors, etc.

- Participation - LinkedIn Local Event

Dr. Shekhar Kapoor, the TPO, BSDU was invited as Guest of Honor in the fourth edition of the LinkedIn

Local held at the auditorium of MNIT, Jaipur on 2 October 2022. In his address, Dr. Kapoor motivated the students and participants to strive for building skills aligned with the latest technical developments. The event witnessed the participation of the social media influencers, educationalists, youtubers, social activists and the students in good number.

- Workshop on Project Management: An Essential Skill

The TPO- Dr. Shekhar Kapoor was invited as guest and speaker along with the General Manager, CBRE, Hyderabad, Mr. Kailash Chaudhary and Dr. Shankar Chaudhary by the Pacific University, Udaipur, in November 2022. He delivered a talk on *Project Management as an Essential Skill* citing case studies and various other examples.

- Industrial Visit to RS India

An industrial visit was organized by the School of Manufacturing Skills to RS India Pvt. Ltd. on 15 September 2022 for the students of B.Voc 1<sup>st</sup> semester. The visit aimed to provide industrial exposure to the students and to make them aware about workplace safety and precautionary practices of the industry.

- Industrial visits to various Organizations

- ❖ Mahindra Tractors, Ajmer Road by TPO & Team SAS
- ❖ Alisha Torrent Closures India Pvt. Ltd., MWCJ by T&P Team
- ❖ Classic Signages Pvt. Ltd., Jaipur by T&P Team
- ❖ Mateshwari Bus Transport Pvt. Ltd., Jaipur by T&P Team
- ❖ SWEM Water India Pvt. Ltd., Jaipur

- Placement Drive

A placement drive was organized in the School of Electrical Skills on 5 August 2022 with the help of Renewable Energy Association of Rajasthan (REAR) for students of B.Voc.- Renewable Energy Technology Skills. Three companies - Jackson Power Systems and Statcon Energiaa Pvt. Ltd., Watt Score Energy Pvt. Ltd, and Soul Solar Pvt. Ltd. participated in the drive.



- **Industrial Associations and Industrial Data Collection**  
With an aim to build, develop and promote tie-ups with the leading industries, the TPO, Dr. Shekhar Kapoor held meetings with various Industrial associations such as the Bagru Industrial Association, Sitapura Industrial Association, Vishwakarma Industrial Association, Bhiwadi Industrial Association and with the executive committee of the Federation of Rajasthan Trade and Industries. The industries enlisted in the Associations along with the contact details of the key persons were collected for further coordination with respect to internships and placements of the students.

### **New Collaborations and Industry Partners**

- ❖ SWEM Water Tech India Pvt. Ltd.
- ❖ Innvolution Healthcare Pvt. Ltd., Jasubhai Engineering
- ❖ ARK Business Group, Ace Exim Pvt. Ltd.
- ❖ Amar Jain Hospital
- ❖ We Love Caring: Holistic Healthcare Center
- ❖ Hero Group, Tesca Technologies Pvt. Ltd.
- ❖ Austeofix Surgicals Pvt. Ltd.
- ❖ Godrej & Boyce
- ❖ Chokhi Dhani Foods
- ❖ Classic Signages Pvt. Ltd., Duratonic Systems Pvt. Ltd.
- ❖ Ensol Multiclean Equipments Pvt. Ltd.
- ❖ Rastogi Steel Furnitures
- ❖ Decathlon, Somani Group of Industries
- ❖ Keshav Industries

## **Visits @ BSDU**

### **Hero Moto Corp.**

With respect to strengthening the training partnership and future collaborations with BSDU, a team comprising the members viz. Mr. Ratan Agrawal, Head HR R&D (Sr. GM), Mr. Shailesh Ashar, GM R&D, Mr. Kumar Devanshu, Sr. Manager HR from Hero Moto Corp. visited the School of Manufacturing Skills on 21 September 2022.

### **MPS International School, Jaipur**

Aiming to skill- train the students of the MPS International School at BSDU, to understand the process of training, available infrastructure and training

facilities, a delegation comprising 5 members viz. Mr. Deepak Sharda (Hon. Secretary), Ms. Archana Singh (Principal), a member from the School Managing Committee, Mr. Akshat Sharma (Teacher), Mr. Anshul Naithani (Teacher) visited the University on 13 October 2022.



In addition to the delegates of the School, the Registrar, BSDU- Dr. Sandeep Tomar, Deputy Registrar- Dr. Shaikh Juned, Principal, SMS & SWSMS -Prof Binit Jha, Head Admission-Dr. Rajdeep Deb, Head, School of General Education- Dr. Sangeetha Noval deliberated on the prospective collaborations and skill trainings at BSDU. The delegation visited all the skill labs of the various Schools at both the campuses and were impressed with the world class skill training set-up available at BSDU and were inclined to collaborate with BSDU as Vocational training partners for the Students of the MPS International.

### **Bhartiya Institute of Engineering and Technology, Sikar**

The University hosted a delegation comprising Dr. Nitesh Kumar Dixit (Principal BIET), Mr. Parth Kumar Gangaopadhyay (HOD, EE), Mr. Prince Kumar (Vice HOD, ME), Mr. Ganesh Narayan Sharma (Vice HOD, CE), Mr. Pankaj Gothwal (HOD, Cs) of Bhartiya Institute of Engineering and Technology, Sikar on 2 November 2022. The delegates on their visit were highly impressed with the World class infrastructure and training facilities at BSDU.

### **Mr. Sai Krishna Rao and Mr. Sehum Shah Schneider Electric**

Mr. Sai Krishna Rao and Mr. Sehum Shah from *Schneider Electric* on their visit to BSDU on 3 November 2022

appreciated the world class infrastructure and training facilities used for training the students.



They were highly convinced with appropriately equipped labs of various schools befitting the industrial requirements. In order to pace up with the new developments in technology, the experts suggested to introduce KNX (a technology that controls the automation of integral functions of any residential, commercial or industrial building) in the advanced automation which is the current industrial requirement.

#### **Shri Rupinder Singh IPS, IG, Ajmer**



Shri Rupinder Singh IPS, IG, Ajmer Range visited BSDU Jaipur on 13 December 2022. Professional Development Programme for the Law Enforcement Agencies using Bhartiya Skill Development University's world-class training facilities was discussed.

#### **Hilti Manufacturing India Pvt. Ltd.**



In order to understand the training process extended in the School of Manufacturing Skills and also for assessing the prospective collaborations with BSDU, a delegation from the *Hilti Manufacturing India Pvt. Ltd.* visited the University on 5 September 2022 and 19 December 2022. The delegation comprising Dr. Carl Hoffmann, Head of Global Manufacturing ET&A and Mr. Giridhar Jambunathan, Director & CEO of Hilti Manufacturing India was overwhelmed with the *State -of- the -art* facilities used for imparting world class training at BSDU and desired upskilling their employees at the University.

#### **National Skill Development Corporation**

The University proudly hosted Mr. Ved Mani Tiwari CEO, NSDC & MD, NSDC International and Ms. Shreshtha Gupta, Vice President, IT & Digital National Skill Development Corporation along with Mr. Mohammad Kalam, NSDC State Engagement Officer – Rajasthan and other team members on 24 December 2022.



A fruitful discussion was held to include the Internship of students under the Apprenticeship Act. The delegation also proposed to initiate an employment link for short- term training programmes (1, 3 and 6 months) under the aegis of BSDU and NSDC. The students of BSDU participated in a survey conducted by the team on skill based education and gave their valuable inputs.

### **Articles**

#### ***Advanced Driving Assistance System***

**Mr. Ubed Ul Haque, Trainer**

School of Automotive Skills

Advanced Driving Assistance System (ADAS) can be defined as a technology that helps drivers in navigation

and parking without fully automating the entire process but instead leveraging computer networks to enable more data-driven and safer driving experiences.

ADAS uses the sensors in the vehicle such as radars and cameras to perceive the area around it, and then either provides information to the driver or takes automatic action based on what it perceives.

ADAS's features that provide information most commonly include "warnings" in the name. For example, if the vehicle detects an object such as another vehicle or a cyclist in a location where the driver may not be able to see them, features such as blind spot warning or rear backup warning will alert the driver. Likewise, if the system determines that the vehicle is drifting out of its lane, it could activate lane departure warning to alert the driver.

When these detections are coupled with a technology that takes action beyond a simple warning, ADAS becomes an active safety system – meaning the vehicle will "actively" control braking or steering. These features most commonly include "assistance" in the name.

Earlier, vehicles were just modes of transportation from point A to point B. Today, Vehicles have turned into mobile living spaces. People expect more from their vehicle when stuck in traffic or during leisure drives. With passage of time people in the current scenario expect their vehicles to provide them comfort and safety like their homes which has turned today's vehicles into 'Computer on Wheels'

### **Safety-related development in ADAS equipped Vehicles**

As per the data issued by the National highway traffic safety administration, USA. the probability of accidents/fatalities can be possibly be avoided or reduced using the technology provided by ADAS features as mentioned:

- Adaptive Cruise Control
- Blind Spot Detection
- Emergency Braking system
- Driver Attention Warning
- Driver-eye Movement Monitoring

- Lane Departure Warning
- Traffic Sign Recognition System
- Pedestrian Detection/Warning System
- Forward Collision Warning System

Indian Vehicles equipped with Advanced Driving Assistance System:

S.No.	Make and Model	Autonomous Level of Vehicle
1	Mahindra XUV 700	Level 02
2	Hyundai Tucson	Level 02
3	Honda City E-Hybrid	Level 02
4	MG ZS EV	Level 02
5	BYD Atto 3	Level 02

### **Conclusion**

Almost all vehicle accidents caused by human error can be avoided with Advanced Driver Assistance Systems (ADAS). The role of ADAS is to prevent deaths and injuries by reducing the number of car accidents and the serious impact of those that cannot be avoided.

### ***Waterborne Coatings - Methods, Benefits and Applications***

**Mr. Baljeet Singh, Trainer**

School of Automotive Skills

### **Today's Scenario**

The pollution control board is taking strict actions against the pollution in the environment. One of the major reasons for pollution in the environment is due to VOC (Volatile Organic Compound) which is mainly found in Paint Compounds. In the Automobile sector, it is vastly used in manufacturing as well as the after sales market (service sector). Approximately 10 litres/ 2.5 gallons of paint is used on a single car. As per the data, 50-100 gm VOC is contained in one litre of paint. It has been noticed that more than 0.5 mg/m<sup>3</sup> VOC is not acceptable in Environment.

The federal government caps the VOC content in paint at 250 grams per litre (g/l) for flat finishes and 380 g/l for other finishes.

Thus, engineers play a very important role in developing a product which is more durable and eco-friendly as compared to Polyurethane paints. They developed a

waterborne coating system which produces less VOC. Waterborne coatings contain up to 80% water with small quantities of other solvents, such as glycol ethers. The US and European regulations require waterborne coatings to have a VOC content of less than 3.5 pounds /gallon of water.

Once opened, the water-based acrylic or latex paint is usable up to 10 years if stored properly in a cool, dry room. The same applies to water-based primers that are stored and sealed properly.

#### **Paint Coatings mainly cover the following**

1. Anti-Rust Coat(Phosphorous)
2. Primer Surfacer (Adhesion Promoter)
3. Base Coat (Paint, colour)
4. Gloss Coat (In Metallic, Pearl)

Waterborne Products are available in base coats and in some gloss coats also. This will reduce the use of urethane thinner thus helping in reducing VOC in Paint.

Advantages of Waterborne Coatings:

- They are ideal primers as they possess good resistance to heat and abrasion.
- Provide excellent adhesion.
- Low toxicity and flammability due to low VOC levels and HAP emissions.
- Help reduce air emissions.
- In most cases, these coatings cost less than the solvent-borne coatings and require no additives, thinners, or hardeners compared to the solvent-borne coatings. In addition, less coating is required to cover the same surface area
- The pot life of waterborne products is relatively long and unused coatings can be preserved in a sealed container for future use
- Waterborne primer is ideal for use where solvent primer would react with existing substrate materials or coatings
- The paint guns can be cleaned easily with water or water-based solutions and do not require paint thinner, acetone, or methyl acetate
- Can use conventional application techniques

The only disadvantage of waterborne paint technique is the curing time, specific area for Paint application and requirement of a specialised person.

#### **Application of the Coating**

To use a waterborne coating, spray application equipment designed for waterborne coatings is required.

- The spray guns have to be designed with corrosion resistant materials, such as plastic or stainless steel.
- The curing time for waterborne coatings is comparatively long compared to that for solvent-borne coatings. Consumers have to take that point into consideration before embarking on the coating process, as specialized drying equipment might be required.
- In the case of coating a car for instance, the primer can be applied to all cars and allowed to dry overnight before applying the colour and finish coatings the following day.
- Many large-scale coating factories have installed spray booths with heating and air movement devices to increase production by reducing curing time.
- Waterborne coatings have different viscosity than solvent-borne coatings; hence painters would need to be given adequate training to understand the different application techniques to get optimal results.

#### **Uses of Waterborne Coatings**

Waterborne coatings are available for various applications such as:

- Automotive OEM sector
- As a quick release coating for interiors of coal cars, fly ash hoppers, plastic pellet hoppers, refuse containers and trucks, filled with PE or Teflon extenders
- To coat porous materials such as paper or leather
- Emulsion waterborne paints are widely used in the architectural market sector
- Printing Inks

#### **Conclusion**

Most of the OEMs in the Automotive Sector are stepping forward for the environment and eco-friendly paint. It is increasing the self-healing properties of paint and reducing the risk of liver and lungs of the applicator.

This step towards future endurance will enhance the importance of Paint Applicators.

### ***Cold Storages: Future Scope***

**Md Najmool Haque Trainer**

School of RAC Skills

Human beings give priority to comforts over anything else. This human comfort includes a wide range of activities throughout the lifespan. One aspect is the safety and security of the future. Cold storage is the result of this thought.

The main purpose of cold storage is to retain the produce over a certain period of time without losing its texture and nutritious value. In the earlier day's people were also using the concept of cold storage, although it was natural. Thus, cold storage is of two types- Natural and Artificial cold storages.

Natural cold storages are the ones that don't use any machines to store and preserve the produce. Examples of this system can be observed in our homes where food is preserved by maintaining the low temperature of utensils.

Artificial cold storages are the ones that use refrigeration machines to store and preserve the produce. In modern times, the usage of cold storages has increased drastically. It can be observed in various sectors like- Dairy industry, Food industries, pharmaceuticals industries, Hospitals, Refrigerated transportation etc. Domestic refrigerators are also a mini cold storage system. Major reasons for increasing the usage of cold storages may be global warming, uneven food production, and increasing medical requirements of people. These machines use refrigeration systems and this refrigeration system plays a pivotal role in the cold chain industry. Because of the cold chain industry, we enjoy food products which are not even produced in our region or country. Therefore, these produces are brought to us using refrigeration systems from other regions/countries. Now let's understand the working of cold storage machines and its future scope. A cold storage machine works on

vapour compression refrigeration cycle (Majorly). It has four main components such as Compressor, Condenser, Expansion devices and Evaporator. All these components are assembled in a sequential closed loop. They all are connected using piping. A refrigerant circulates through these piping which acts as a heat carrier medium. Electrical power is supplied to the compressor and the compressor starts working. The main function of a compressor is to generate and maintain the sufficient pressure of refrigerant to circulate it throughout the refrigeration cycle. As refrigerant starts circulating and it undergoes phase change because of heat absorbing and heat rejection. It absorbs heat from the inside air of cold store space. Now absorbed heat comes in contact with low temperature refrigerant circulating inside the pipe and thus heat transfer occurs and temperature of inside air gets lowered and temperature of refrigerant increases and thus refrigerant changes phase from liquid to vapour. Now this additional heat is rejected by refrigerant through the help of condenser and the condenser is placed in outer space. It may be air cooled or water cooled. So far, we have understood the components – compressor, condenser and Evaporator. Now let's understand expansion devices. It's another important component after the compressor as it reduces the pressure of the refrigerant thus lowering the temperature. Low temperature of refrigerant at the exit of the expansion device makes it able to absorb heat from inside which occurs inside the evaporator. Now we shall discuss the future scope of cold storages. As we have already discussed the various applications of cold storages. Demand for food will always be increasing as the world population increases. Therefore, demand for cold storage will increase automatically. In conclusion we can say that the concept of cold storage is not new and has been used since the last hundreds of years. Artificial cold storage came into existence for its wide range of usage. Cold storage industry is an emerging industry with a long and sustainable future scope.

## ***HVAC Solution for Computer Room/Data Center***

**Dr. Sheetal Kumar Jain, Principal In-charge**

School of RAC Skills

Air-conditioners were originally developed prior to the advent of PC's when large mainframe computers were used by corporations to cater to their business operational requirements. These large computers required reliable air conditioning systems capable of running round the clock, maintain very close control on environmental conditions i.e., temperature and humidity and have high sensible cooling capacity (equipment cooling / equipment heat removal) since the equipment loads were dominant in these applications.

These computers were kept in structures with independent central air conditioning systems that weren't made to meet these specifications. Industry experts created bundled units that might work dependably and satisfy the demands of computer makers. Precision air conditioners is the name given to these particularly designed packaged units in order to describe their major uses and set them apart from regular comfort packaged air conditioners.

Today, precision air conditioning systems are used in a wide range of applications such as Server rooms, Computer rooms, Data centers, Switch centers, Telecom shelters, Quality Control labs, Precision Manufacturing CNC Machine, Pharmaceutical industry, medical equipment, clean rooms and many more.

A basic PC comprises a monitor, key board, mouse and a CPU which houses the motherboard, hard disk etc.

These CPUs based on the application vary in capacity.

For large applications the CPU is replaced by Servers which have larger capacities of storage space, memory, operating speed, operating options, possibility of networking etc. Also, Servers give flexibility for several workstations to share and access data simultaneously with suitable networking. Along with precision air conditioners, to cater to a larger requirement, several Servers have to be grouped together in a common housing called a rack. Depending on the number of workstations and types of application, the Server

capacity and rack capacity is estimated. We can define a Server room as a room in which the main frame Server is located (with or without racks) which is the nucleus of a computer integrated workplace having many operational terminals which are connected with suitable networking arrangements. A Server room is normally operational for 24 hours and 365 days, hence design criteria include redundancy and standby provisions.

In today's scenario where almost, all industries are catered to by the IT hardware and software products in most applications like banking, travel, hospital, software development, consultancy, designing, e-commerce, e-business and data centers, downtime in operations means huge losses (both monetary and goodwill) for the company and hence not affordable at any cost. Any shut down in the Server due to internal faults or malfunctioning as a result of external factors such as power supply or environmental control will result in stoppage or delay in the activities of the end user. All this emphasizes the importance of designing and developing the Server room infrastructure of which precision air conditioning systems form an important part.

Data centers can be ideally air-conditioned using precision air conditioning systems originally developed to meet the cooling requirements of large mainframe computers. Precision air conditioners are different from standard air conditioners in the following ways:

- High cfm per ton
- High sensible heat ratio
- Suitable for continuous 24 hour and 365-day operation
- Inbuilt options of heater, humidifier, dehumidification to control temperature and humidity simultaneously.
- Microprocessor controls for close control on temperature and humidity with a user-friendly interface.
- Better air filtration

## ***KNX: A Future Proof Technology***

**Ms. Priyanka Rathore, Trainer**

School of Electrical Skills

KNX is a technology which controls the automation of integral functions of any residential, commercial or industrial building such as HVAC, lighting systems, multimedia, security, energy management and more. KNX is the internationally recognized and worldwide standard for smart home automation and building control which is also the world's only open standard for home and building control and is compliant to EN 50090, EN 13321-1 and ISO/ IEC 14543, and has been submitted for Australian standards approval.

The demand for comfort and versatility in the management of heating, lighting and access control systems for a family home as well as an office complex is growing. At the same time, the efficient use of energy is becoming increasingly important. People want a comfortable, sustainable and safe place to live and work and that's where automation jumps in.

However, more convenience and safety together with lower energy consumption can only be achieved by intelligent control and monitoring of all products involved. This is a true challenge as it implies more wiring, running from the sensors and actuators to the control and monitoring centres. For professionals, such a mass of wiring also means higher design and installation efforts, increased fire risk and soaring costs. That's where KNX jumps in.

The smart home and building market are constantly changing and technology is improving fast. KNX works by ensuring all components, devices, features and functions of any building (or outdoor space) communicate via one common language instantly and remotely.

KNX bus line is the main central nervous system for all automatons. It is a green cable which is installed in addition to the conventional mains supply during a new build or renovation project.

All of the various building technology elements are then connected to one another via the main KNX bus line in accordance with the KNX standard for building

automation. The cable system is then managed by such things as sensors, detectors, parameters, etc. — which can then be conveniently controlled by end users with a laptop, smartphone or tablet device. The KNX bus is routed in parallel to the electrical power supply to all devices and systems on the network linking: Sensors (like- push buttons, thermostats, anemometers, movement) gather information and send it on the bus as a data telegram. Actuators (dimming units, heating valves, displays) receive data telegrams which are then converted into actions; and Controllers and other logic functions (room temperature controllers, shutter controllers and other).

The benefits of KNX

- A future-proof technology
- Endless flexibility and personalization
- A safe and secure system
- Timesaving and easy installation
- An integrated and future proof solution
- An international community

## ***Introduction to Artificial Intelligence***

**Ms. Pushpa Koranga, Research Scholar**

School of Computing Skills

Artificial Intelligence is defined as the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.

AI is also defined as

- An Intelligent Entity created by humans
- Capable of Performing Tasks intelligently without being explicitly instructed.
- Capable of thinking and acting rationally and humanely

**How do we measure if Artificial Intelligence is acting like a human?**

Even if we reach that state where an AI can behave as a human does, how can we be sure it can continue to behave that way? We can base the human-likeness of an AI entity on the:

- Turing Test
- The Cognitive Modelling Approach
- The Law of Thought Approach

- The Rational Agent Approach

### **a) Turing Test in Artificial Intelligence**

Alan Turing proposed a simple method of determining whether a machine can demonstrate human intelligence. If a machine engages in a conversation with a human about how to process the data, it has been demonstrated by a machine.

The Turing judges the conversational skills of humans. According to this test, a computer program can think of a proper response for humans. This test matches the conversational data from the existing data through an algorithm and back responds to humans.

The basis of the Turing Test is that the Artificial Intelligence entity should be able to hold a conversation with a human agent. The human agent ideally should not be able to conclude that they are talking to Artificial Intelligence. To achieve these ends, the AI needs to possess these qualities:

- Natural Language Processing to communicate successfully.
- Knowledge Representation acts as its memory.
- Automated Reasoning uses the stored information to answer questions and draw new conclusions.
- Machine Learning to detect patterns and adapt to new circumstances.

### **b) Cognitive Modelling Approach**

As the name suggests, this approach tries to build an Artificial Intelligence model based on Human Cognition. To distill the essence of the human mind, there are 3 approaches:

- Introspection: observing our thoughts, and building a model based on that
- Psychological Experiments: conducting experiments on humans and observing their behavior
- Brain Imaging: Using MRI to observe how the brain functions in different scenarios and replicating that through code.

### **c) The Laws of Thought Approach**

The Laws of Thought are a large list of logical statements that govern the operation of our mind. The same laws can be codified and applied to artificial intelligence algorithms. The issue with this approach, is

because solving a problem in principle (strictly according to the laws of thought) and solving them in practice can be quite different, requiring contextual nuances to apply. Also, there are some actions that we take without being 100% certain of an outcome that an algorithm might not be able to replicate if there are too many parameters.

### **d) The Rational Agent Approach**

A rational agent acts to achieve the best possible outcome in its present circumstances.

According to the Laws of Thought approach, an entity must behave according to logical statements. But there are some instances, where there is no logical right thing to do, with multiple outcomes involving different outcomes and corresponding compromises. The rational agent approach tries to make the best possible choice in the current circumstances. It means that it's a much more dynamic and adaptable agent.

Now that we understand how Artificial Intelligence can be designed to act like a human, let's take a look at how these systems are built.

### **Types of Artificial Intelligence**

**a) Artificial Narrow Intelligence:** Artificial Narrow Intelligence (ANI) also commonly known as weak AI or narrow AI. It is particularly that type of AI that we have been able to successfully realize and implement in the present date. It is a goal-oriented, narrow range ability holding perspective that executes specific focused tasks, without the ability to the self-expand mechanism (functionality). Machines that are focused on one narrow task operate under a narrow set of constraints and limitations, that's why they are commonly referred to as WEAK AI. Narrow AI doesn't replicate proper human intelligence; it basically simulates/mimics human behavior based on a narrow range of parameters.

Narrow AI has faced a lot of ups and downs in the past few decades incorporated by the progress made in machine learning and deep learning. Narrow AI is basically a combination of two words: AI meaning the technology to simulate human behavior in machines through a set of algorithms and the second word being Narrow, so it basically means implementing the concept of AI but with a narrow range of abilities.



**b) Artificial General Intelligence (AGI):** AGI is still a theoretical concept. It's defined as AI which has a human-level of cognitive function, across a wide variety of domains such as language processing, image processing, computational functioning and reasoning and so on.

We're still a long way away from building an AGI system. An AGI system would need to comprise thousands of Artificial Narrow Intelligence systems working in tandem, communicating with each other to mimic human reasoning. Even with the most advanced computing systems and infrastructures, such as Fujitsu's K or IBM's Watson, it has taken them 40 minutes to simulate a single second of neuronal activity. This speaks to both the immense complexity and interconnectedness of the human brain, and to the magnitude of the challenge of building an AGI with our current resources.

**c) Artificial Super Intelligence (ASI):** ASI is seen as the logical progression from AGI. An Artificial Super Intelligence (ASI) system would be able to surpass all human capabilities. This would include decision making, taking rational decisions, and even includes things like making better art and building emotional relationships. Once we achieve Artificial General Intelligence, AI systems would rapidly be able to improve their capabilities and advance into realms that we might not even have dreamed of. While the gap between AGI and ASI would be relatively narrow (some say as little as a nanosecond, because that's how fast Artificial Intelligence would learn).

#### **Advantages of Artificial Intelligence (AI)**

- Reduction in human error
- Available 24x7
- Helps in repetitive work
- Digital assistance
- Faster decisions
- Rational Decision Maker
- Medical applications
- Improves Security
- Efficient Communication

#### **Disadvantages of Artificial Intelligence**

- High Costs
- No creativity
- Unemployment
- Make Humans Lazy
- No Ethics
- Emotionless.
- No Improvement

#### ***Cell Phones Facilitate Learning***

**Ms. Megha Nigam, Research Scholar**

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"I made a decision to stop my girl child education after her 12th completion because the distance of my village from the nearby college is 30 km. It is risky and dangerous to travel such a long distance." Frequently we hear such a statement in many parts of India especially in Villages and remote locations. Accessibility of quality education is still limited to educational institutes. The solution to such problems is m-learning (Mobile learning).

Traditionally, learning was teacher-centric and localized. In the modern world, the use of cellphones is learner-centric. Personalized and lifelong learning is a gift to human beings from the inventor of cell phones. The use of cellphones not only provides knowledge by teachers, it also helps in counseling the students in different phases of life. It also helps teachers to understand individuals and provide the required support to develop in all perspectives of life. Cell Phone learning also helps in understanding the surroundings and other external factors, which was very limited earlier due to classroom learning. In such an era there is a need for continuous learning. m-learning is the best platform for such learners who want to engage themselves in learning along with working to earn their bread and butter.

Mobile games are a favorite pastime for all age group people. Various mobile applications for learning purposes are present in subjects like English, Mathematics, which make the learning process more interesting. The capability to grab and retain the interests and attention of learners is the biggest advantage of game-based learning using cell phones.

The use of mobile phones is also helping in spreading the awareness information amongst the crowd in a very short span of time. As we all are aware, currently the world is facing a coronavirus problem which is very severe. Use of WhatsApp, chat, message, caller tune helping the government to spread the knowledge and different rules and regulations regarding coronavirus from time to time by the use of mobile.

Now, coming to the conclusion, learning from a cell phone is innovative and the best way of learning in the current scenario. It helps to enhance knowledge, skill and attitude amongst the learner.

### ***Food Wastage in India: A Concern***

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According to the United Nations, an estimated 17 per cent of total global food production is wasted annually. In 2020, the Global Hunger Index (GHI) ranked India at 94 among 107 countries, which means only 13 countries performed worse than India when it came to meeting their population's food needs. As many people still sleep without eating enough every day, food waste remains a serious cause for concern.

To create change around this worrying trend, the world celebrates International Day of Awareness on Food Loss and Waste Reduction every year on September 29. The day is used to remind both people and the private sector to be innovative and reduce the amount of food wastage, and ultimately build a resilient food system. The efforts by the United Nations are made through its Food and Agriculture Organization (FAO), which focuses on reducing hunger and improving nutrition.

#### **India and food wastage**

According to the UNEP report for 2021 called UN Food Waste Index Report 2021, India wastes as much as 50 kilos of food per person per year. That amounts to a staggering 68,760,163 metric tonnes of household food waste per year. While India's per capita wastage is the lowest among South Asian countries, the volumes of loss are large, especially considering as many as 27 percent of Indians went to bed hungry sometimes, according to a survey conducted in October 2020 by

Hunger Watch. Higher income groups tend to waste more, as per observations in the UN report.

As part of efforts to reduce food wastage, in 2017, the Food Safety and Standards Authority of India (FSSAI)'s platform Indian Food Sharing Alliance (IFSA) had launched a 'Save Food, Share Food, Share Joy' initiative. It is collaboration between the various stakeholders involved in the food ecosystem to prevent food wastage in the supply chain and household consumption. Food loss and waste undermine the sustainability of our food systems. When food is lost or wasted, all the resources that were used to produce this food, including land, water, energy, labour and capital- go to waste. Food wastage's carbon footprint is estimated at 3.3 billion tonnes of CO<sub>2</sub> equivalent to GHG released into the atmosphere per year. Only government policies are not responsible for food waste problem we are facing today, but our culture and traditions are also playing an important role in this drama.

#### **The International Year of Fruits and Vegetables**

Incidentally, 2021 was also the International Year of Fruits and Vegetables, designated by the UN General Assembly. It is an attempt to increase awareness about the role of fruits and vegetables in nutrition, food security and health. The year has been marked nine years ahead of the target to achieve SDG 12 -- which was set in 2015 -- for encouraging sustainable consumption and production of food and reducing food wastage by half by 2030.

So, stopping the wastage of food is one single step that can make our country and planet a better place to live. It is a very easy habit that needs a small tweaking of our existing habits of how we consume and store our food.

### ***Environmental Friendly Cooling Process in Prospect of Sustainable Manufacturing***

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Owing to environmental concerns and growing regulations over contamination and pollution, the demand for renewable and biodegradable cutting fluids

is rising. In this review paper, an attempt is made regarding green machining including the cutting fluid type as well as the methods to apply the cutting fluids in the machining process. Knowledge of the cutting fluid types and their machining conditions is critically important in order to maximize the efficiency of cutting fluids in any machining process. Generally, heat generation at the cutting zone due to the friction at the tool-chip interface, and friction between the clearance face of the tool and workpiece is always the decisive factor on the surface quality of the workpiece. A good understanding of the methods to apply cutting fluid at the cutting zone may significantly reduce the heat generation in machining and thus improve the surface roughness. Surface roughness and tool wear are always used as quality indicators of a finished or semi-finished product. This paper reviews the developments in bio-based cutting fluids by using various vegetable oils and their performances in machining. Undoubtedly, these bio-based cutting fluids have significantly reduced the ecological problems caused by mineral-based cutting fluids. An overview of the cleaner application techniques of dry cutting, minimum quantity lubrication (MQL), and cryogenic cooling is also well presented. These techniques largely minimized the amount of cutting fluids used in machining while providing similar or even better cutting performances compared to wet cooling methods.

### Need for Environmental Friendly Cooling

In today's manufacturing industry, the demand is growing for low-cost, high-productivity, and good product quality. High productivity, which is inherently associated with high cutting speed, feed rate, and depth of cut, significantly leads to a large amount of heat generation and raises the temperature at the cutting zone. Consequently, the dimension accuracy, tool life, and surface integrity of the product deteriorated. Today, cutting fluids is considered an accessory in a machining process in order to increase productivity. In terms of performance, it effectively increases the tool life, producing better dimensional control and good surface quality. A good surface finish is not only desired for the aesthetic appeal of a product but also to improve tribological properties, fatigue strength, and corrosion resistance. Thus, surface quality is extremely important in evaluating the productivity of machine tools and mechanical parts.

Besides, it can be used as a critical quality indicator for the machined surface. The surface roughness mechanism is very complicated and mostly depends on the process parameters. If the cutting speed or feed rate is slowed down just to make the surface substantially smoother, it is just a waste of resources without significant gains in productivity. Therefore, optimization in cutting parameters as well as the efficiency of cutting fluids should be well determined to produce a quality product.

### BSDU Glimpses



World Youth Skills Day



Students' Club Inauguration



Independence Day



Mini Job Fair



Parakram 2022

# BSDU NEWSLETTER



POLYMECHANIC BLOCK



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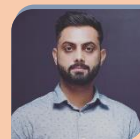
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