University Innovators' Club

Babasaheb Bhimrao Ambedkar (Central) University, Lucknow (UP) 226 025



BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
LUCKNOW
प्रज्ञा शील करुणा
ESTABLISHED 1996

Prof. B. C. Yadav, Incharge,
Innovation Cell & USIC, BBAU

Dr. Venkatesh Dutta, President,
University Innovators' Club

Activities of our Innovation Club

- **Search:** Mapping the creativity and innovations in the Uttar Pradesh through identifying grassroots innovators
- **Spread:** Disseminating/Cross-pollinating innovations across spaces, social segments and sectors through active faculty and students engagements
- **Sense or Benchmark:** Identifying the unmet social, technological, educational problems in the society to develop solutions for them, and add value to existing solutions
- **Celebrate:** Recognising achievers in different social segments by inviting them to classroom, labs/workshop to draw inspiration form them and also recognise their creativity. We organise yearly summit of the innovators and faculty mentors



Innovators of Teaching and Learning @ BBAU



Inauguration of BBAU Innovators' Club by Former President of India Sri Pranab Mukherjee on 10th May 2013



Inauguration of **"Grassroots Innovators Summit & Exhibition (GrISE)-2017"** at Babasaheb Bhimrao Ambedkar University, Lucknow by Hon'ble President of India Shri Ram Nath Kovind Ji



Major Highlights of our Innovators' Club

- **First Central University to start UIC:** Inauguration of *BBAU Innovators' Club* by Former President of India Sri Pranab Mukherjee ji on 10th May 2013 to bring breakthroughs from the land to the lab and from the lab to the land focusing on inclusive growth.

- **Recognition of *Inspired Teacher* (*25 faculty*)** and encouraging them to create a wider network to share their knowledge.

- **Initiation of a *Startup Centre*** to promote startup ecosystem and innovation in the campus.

- **A number of MoUs have been signed** creating synergies among various stakeholders which include Universities, Industries, Students and Society.

- **Some of our innovative projects conceived by the Innovators' Club and mentored by the faculty members**
- Solar fencing of the campus
- Green BBAU initiative with **56** acres of constructed wetlands
- Paddlewheel water purifier for flood-affected areas
- Integrated approach towards wastewater treatment and bioelectricity generation using MFCs
- Low-cost bioremediation techniques
- Smart wheelchair for specially-abled children
- Walking stick cum chair for the old people
- Cleanala system to treat wastewater in the drains

Babasaheb Bhimrao Ambedkar University, Lucknow

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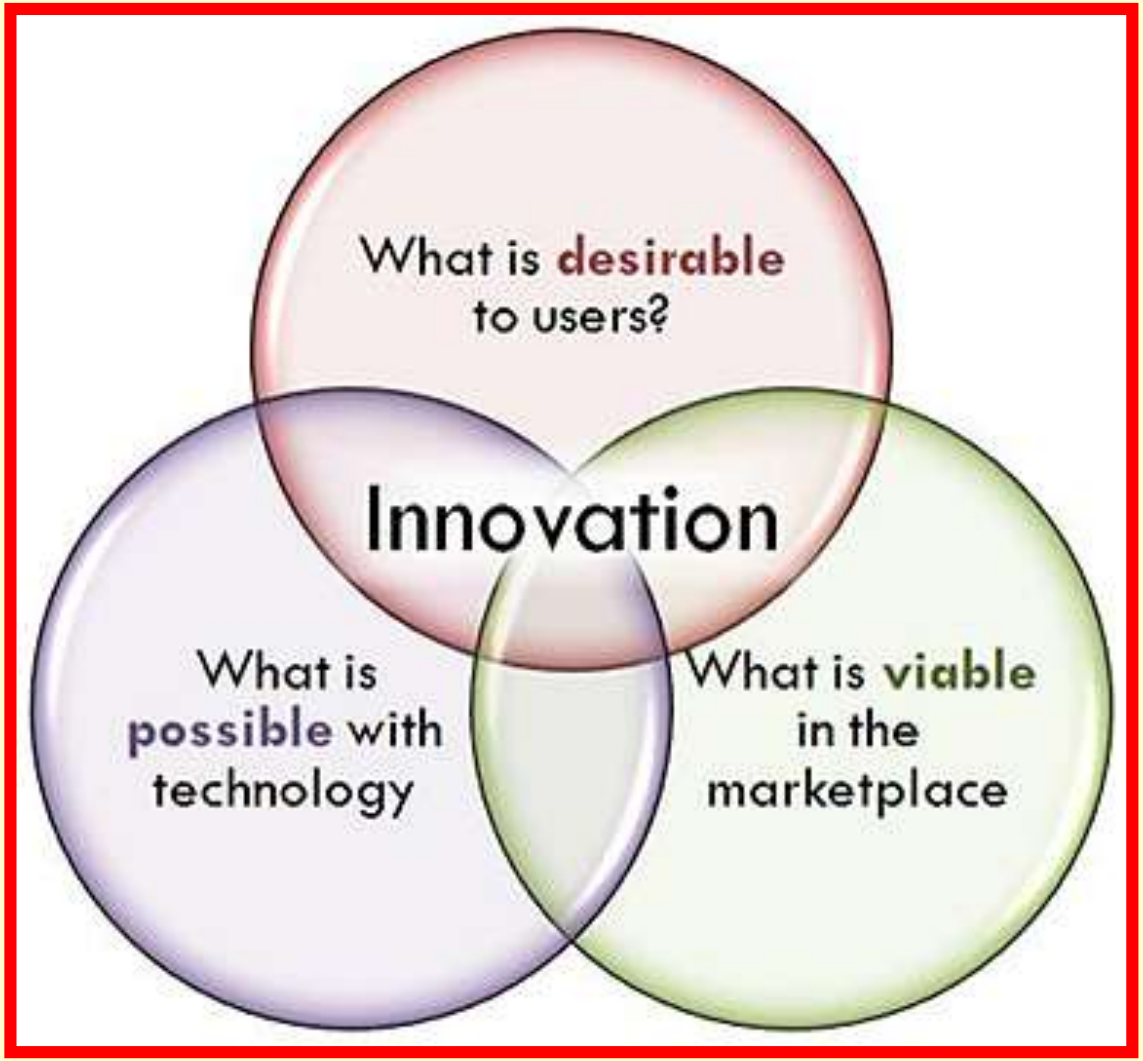
University Innovation Club
Our Focus is on :



- ...with a strategic focus on transfer of applied science to innovation in the form of successful start-ups by researchers and students

Cluster initiative: development cross-disciplinary groups from several institutions to support innovation





University Cluster Initiative

Search: Mapping the creativity and innovations in the Uttar Pradesh through identifying grassroots innovators












...और मोबाइल की मिस्ड कॉल से ही शुरू हो गया ट्यूबवेल

Spread: **Disseminating/Cross-pollinating innovations across spaces, social segments and sectors through active faculty and students engagements**



Innovations developed by BBAU Innovators' Club during 2017 – 18

Solar Smart Cane for Visually Impaired

Garima Mishra & Dr. U. V. Kiran: The purpose of developing smart cane is to build a navigation system that will be able to guide a visually impaired person safely and with ease, in an indoor and outdoor environment. The developed prototype has been tested on total thirty respondents.

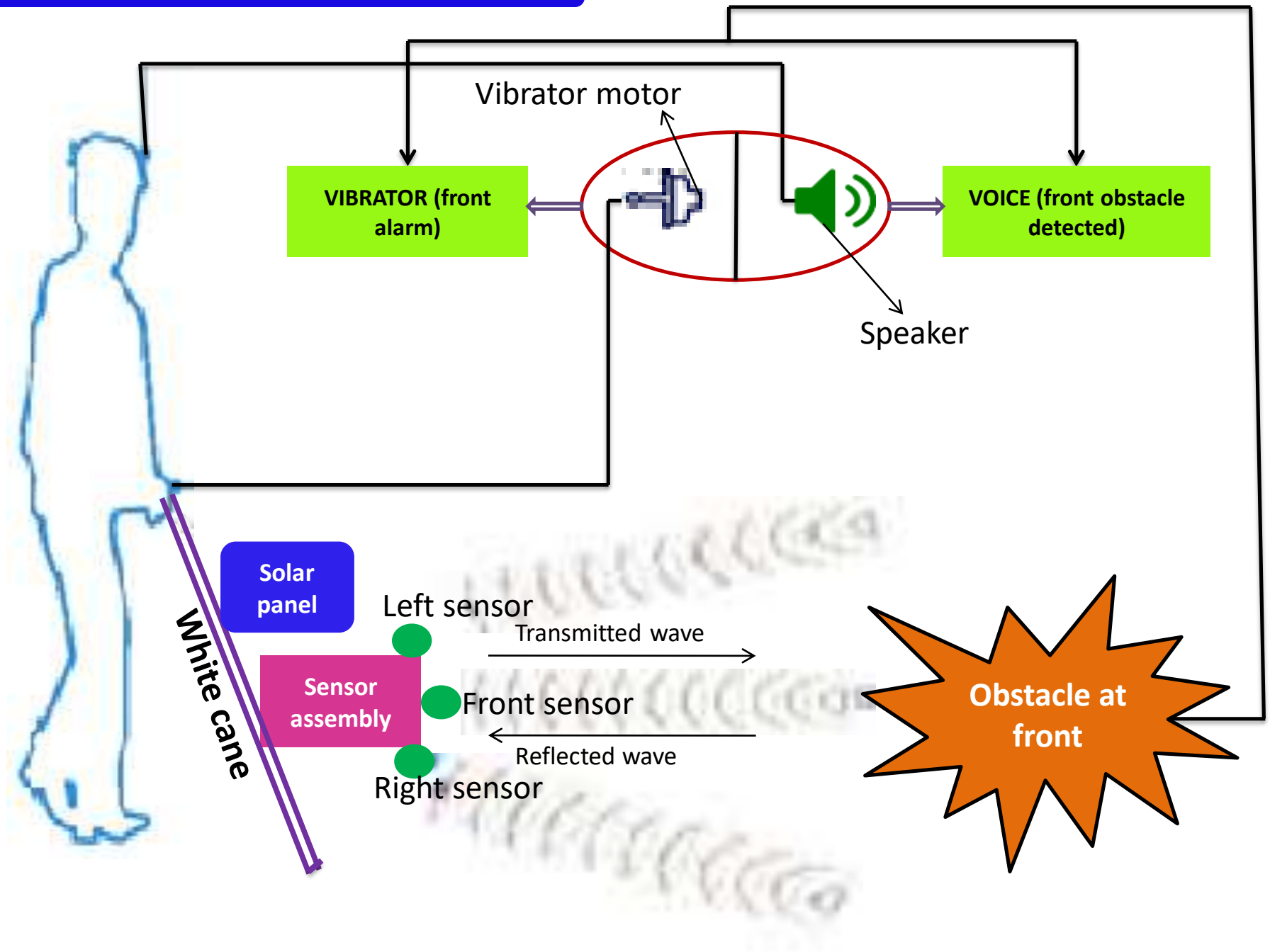




FEATURES OF THE SOLAR SMART CANE

Components of prototype	Functions
White Cane with adjustable height	To held the components of device as a mechanical support and to adjust the height of cane according to height of user.
Grip	Grip is used for effective control/support over smart cane.
Sensor assembly	It is used to detect obstacle. Actually, this consists of two main component transmitter and receiver. Transmitter generates infrared wave and the receiver senses infrared wave reflected from obstacle.
Vibrator	It is used to produce vibration in smart cane when some obstacle is detected.
Microcontroller	It is used to control the device functions.
Speaker	It is an electro-mechanical component used to change electric current into sound. It is used in this smart cane to produce sound when obstacle is detected.
Voice recorder	This device stores and reproduces voice signals in their natural forms. The voice signals for 'front', 'left' and 'right' obstacle detection is stored in this recorder.
Solar Cell	It is a device which converts solar energy directly into electricity. In this smart cane, it is used to provide electrical energy to the system for functioning.

PROCESS DIAGRAM



Orthopedic Shoes

- **Shivani Singh & Ankita Tiwari, MSc (IInd Yr.), Department of Human Development & Family Studies**



Power Generation using Speed Breaker

- Nitin Sahu and Anubhav Rastogi, B.Tech (Mech.), IV Yr



Spirulina Soup Sticks & Spirulina Pizza Base

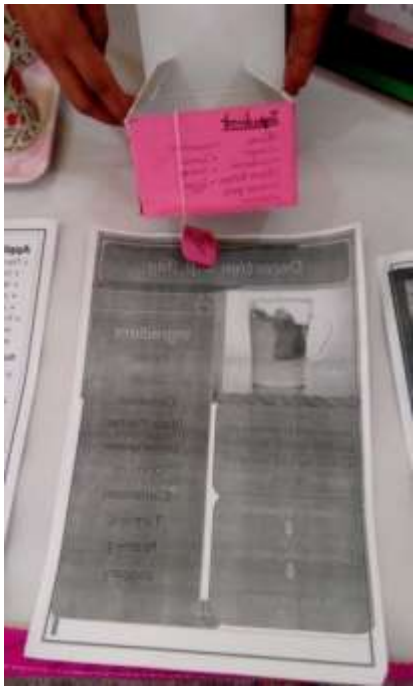
- **Neeraj Verma & Ashok Kumar, MSc (IV Sem), Food Science and Technology, School of Home Science**
- **Spirulina** represents a biomass of cyanobacteria (blue-green algae) that can be consumed by humans and other animals. The two species are Arthrospira platensis and A. maxima. Cultivated worldwide, Arthrospira is used as a dietary supplement or whole food.



Antioxidant Decoction(*Kadha*) Dip Bag

- **Pratiksha Gautam, Neetu Singh, Arpana Tiwari & Amrish Kumar, MSc (II Yr), Food Science and Technology, School of Home Science**







Antioxidant rich develops herbal decoction (*kadha*) dip bag by the utilization of spices

Drying of ingredients

Grinding into powdered

Dip bag packaging

Ingredient

Cloves

Ginger

Cinnamon

Black Papper

Lemongrass

Ocimum

Cardamom

Turmeric

Nutmeg

Jeggary

Applications

- The decoction dip bag good for
- Commen cold
- fever
- influenza
- allergy
- It can be used daily to overcome deficiency of antioxidant

Nutritional value

- Highest percentage of vitamin ‘c’
- Tannin
- Minerals

Properties of decoction dip bag:

Antioxidant

- Medicinal Value
- Anti- Bacterial
- Anti- Biotic
- Anti-Fungicidal
- Anti-Viral









Tools & Technique

Tools: Dehydrator, Mixer, Mortar pastel, measuring spoon.

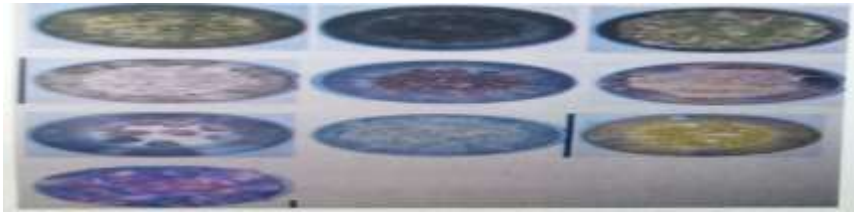
Technique:



Step 1- Tack fresh ingredients,



Step 2- dehydration the ingredients



Step 3- Collect other ingredients,



step 4- Blending and ingredients



Step 5- Grinding into powder form,



Step 6- prepare powder



Step 7 – Measuring ingredients,



Step 8- Mixed the ingredients



Step 9- Fill in the dip bag ,



Step 10 – prepared Decoction dip bag

Raspberry and Papaya Candy

- Mansi Mandal, Sarika Chaudhary, Kapil, Khusboo & Anamika, MSc (Ist Yr.) Food Science and Technology



RASBHARI CANDY

Mansi Mandal, Sonika Chaudhary, Khushboo , Kapil Kumar, Anamika

APPLICATION:

Candy is one of the product mostly consumed by children and when it is for fruit candy, it is one of the healthy option for the children and adults. Being rich in different nutrients especially vitamins (B complex and vitamin C, A) and minerals (Iron and Phosphorous), it provides adequate energy. This healthier candy can be consumed by any age group to enrich their diet. It can be consumed as functional foods in different conditions like hypoglycemia, hypoxia, anaemia and so on…..

Packaging: Dry rasbhari leaves (Biodegradable Packaging material).

Nutritive value: (per 100g)

Energy: 53Kcal
Carbohydrate:11.2g
Fat:0.7g
Protein:1.99g
Vitamin A:36µg
Vitamin B1:0.11mg
Vitamin B2:0.04mg
Vitamin B3: 2.8mg
Iron:1mg
Phosphorous-40mg

Ingredients: Rasbhari fruit, caramelized sugar, cardamom powder, flavouring agents



Selection of fresh rasbhari fruit and cleaning , grading & drying of fruit



Extract pulp from the fruit, Caramalize the sugar



Add rasbhari pulp in the caramalized sugar



Add cardamom powder and flavouring agents



Cool and make candy

Use of Cleanala-wetlands microcosms (CWM) for lake restoration and cleaning

Dr. Venkatesh Dutta, Saroj Bhargava, Divya Dubey, Department of Environmental Science

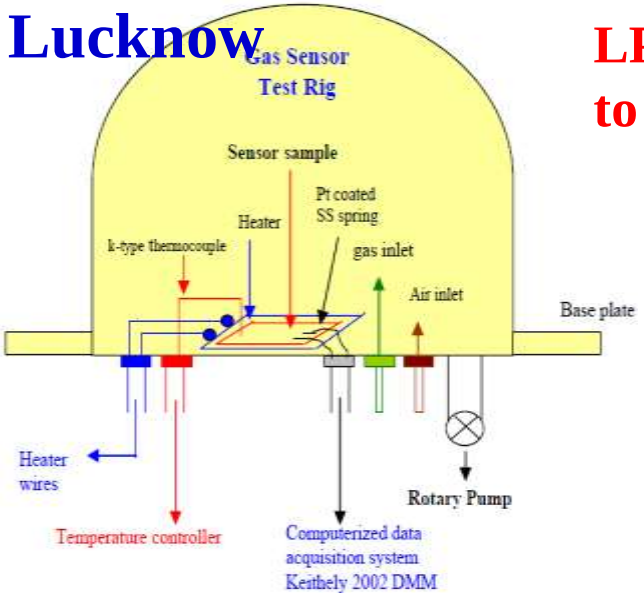








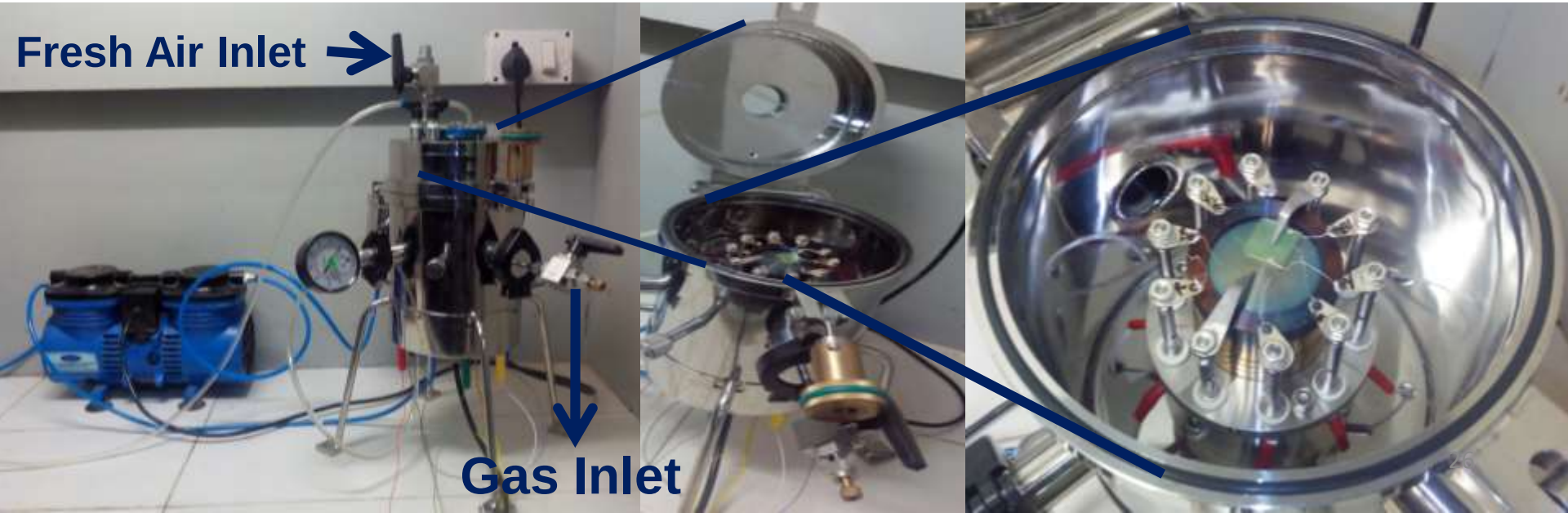
Prof. B.C. Yadav & Monika Singh, Nanomaterials & Sensors Research Laboratory, Department of Physics, BBA University, Lucknow



LPG sensor working at room temperature able to detect the LPG below LEL (< 0.25%).

Gas Sensor Test Ring construction

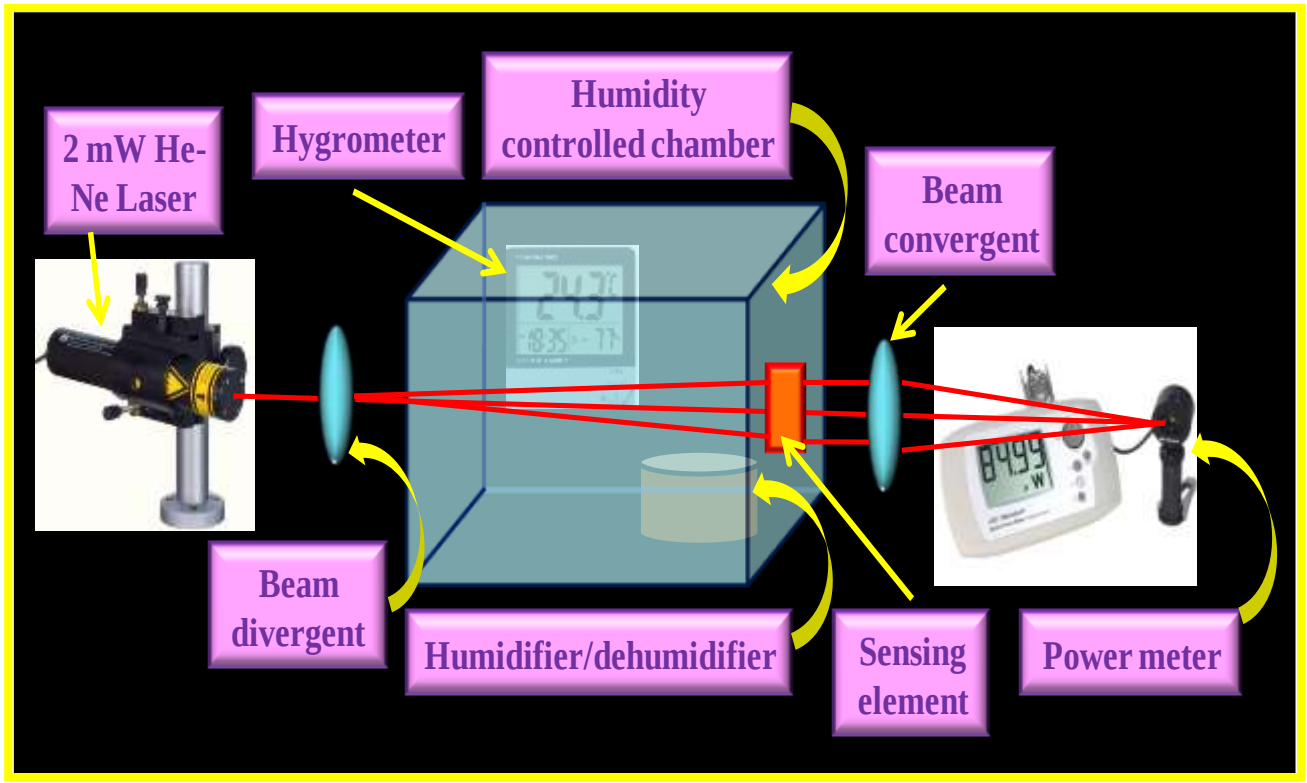
Gas Sensing experiments were carried out in a specially designed gas test chamber



Samiksha Sikarwar & Prof. B.C. Yadav Nanomaterials & Sensors Research Laboratory, Department of Physics, BBA University, Lucknow

Synthesis of La_2O_3-Cr_2O_3-Sr_2O_3 by pyrolysis of metal carboxylates and its opto-electronic humidity sensing

- Remote accessibility for unmanned stations, planets etc.
- Based on Transmission of Light technique.
- Best material developed for this purpose.
- The maximum average sensitivity of opto-electronic humidity sensor for the film was found 3.367 μW/%RH.



Celebrate: Recognising achievers in different social segments







बीबीएयू में मेधावी अन्वेषकों का सम्मान

लखनऊ। बाबा साहेब भीमराव अंबेडकर यूनिवर्सिटी (बीबीएयू) में दीक्षांत समारोह के अवसर पर तीन दिवसीय इनोवेशन प्रदर्शनी का शनिवार को समापन हुआ। अच्छा प्रदर्शन करने वाले अन्वेषकों व अन्य को कुलपति प्रो. आरसी सोबती ने सम्मानित किया। समन्वयक प्रो. बालचंद्र यादव ने बताया कि प्रदर्शनी में पहला पुरस्कार एसएमएस ग्रुप लखनऊ के डॉ. भरत राज सिंह को दिया गया। दूसरा पुरस्कार बाराबंकी के नवाचारी किसान मंसाराम को और तीसरा पुरस्कार एमडी जैन इंटर कॉलेज हरिपर्वत आगरा के विद्यार्थियों को दिया गया।



'Innovation not enough, it should be mainstreamed'

TIMES NEWS NETWORK

Lucknow: An interesting event at this year's BBAU convocation was the 'Grassroot innovators summit and exhibition' that had students from across the state display their scientific models. At the exhibition, President Ramnath Kovind, advised innovators to focus on mainstreaming their inventions. He asked the students to transform their innovations into technologies that can be used in public interest or "jungle mein mor nacha kisi ne na dekha, (innovation that's not mainstreamed is of no use)". He also said universities and educational institutions need to promote such ideas in the form of startups and innovators.

Around 50 scientific innovations, including the washing machine which can be run without electricity, were presented before the President.







सत्यमेव जयते

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On the occasion of the Festival of Innovation 2017

Dr. VENKATESH DUTTA

is invited to attend the

Meeting of National Innovation Club Members

at Rashtrapati Bhavan Cultural Centre, New Delhi

on Wednesday, 8th March, 2017 at 1000 hrs.

The meeting will be followed by lunch hosted by Smt. Omita Paul, Secretary to the President, at 2 MTC, Rashtrapati Bhavan, New Delhi

“Our universities should resort to innovative ways of teaching and research. We do not lack the capability to innovate, but we lack the systems to encourage and generate innovation”

