

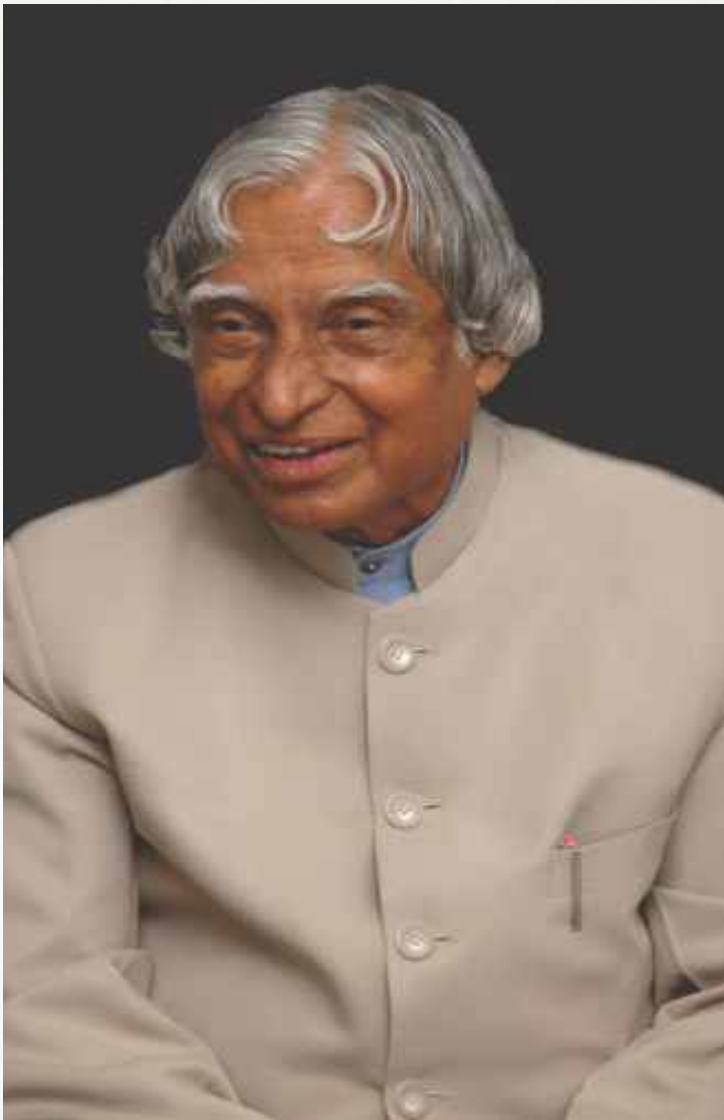
DR A P J Abdul Kalam
IGNITE Awards 2017



राष्ट्रीय नवप्रवर्तन प्रतिष्ठान-भारत
National Innovation Foundation-India



Dr A P J Abdul Kalam IGNITE Awards at the hands of the
Hon'ble Former President Shri Pranab Mukherjee
December 22, 2017



Remembering Dr A P J Abdul Kalam Former President of
India 1931 - 2015



FOREWORD

I am pleased to write the foreword of the Dr APJ Abdul Kalam IGNITE Award Book 2017 of the National Innovation Foundation – India (NIF) profiling twenty nine creative ideas of school students received during the competition period. The award winners come from rural and urban areas of sixteen States and Union Territories of the country, including from Jammu and Kashmir and North East. I am told, this year over 65000 innovative ideas were received from 576 districts of the country and from each State and Union Territory. NIF has been popularizing Dr APJ Abdul Kalam IGNITE competition around the country and I hope in a few years time, participation of students from all districts of the country could be ensured.

I observe that some award winners, who come from far flung areas, have done some wonderful innovative work. This is an evidence that creativity does not have a linear relation with access to resources, which may be a facilitating factor but certainly not something without which creativity cannot evolve.

NIF is now partnering with the Department of Science and Technology (DST) to facilitate DST's INSPIRE MANAK (Million Minds Augmenting National Aspiration and Knowledge) program for school children. I am sure, INSPIRE MANAK and IGNITE together will be able to identify the best and brightest young minds of the country and it is thus very apt that NIF is leading both the efforts now. I am hopeful that in the coming years, many innovative ideas of the children will get converted into prototypes, and prototypes into products, which will eventually go to the market. The DST will facilitate investment in all such promising ideas reiterating the commitment of the Government of India under the Start Up India scheme. The broader INSPIRE scheme supports all innovative scientific pursuits up to the postdoctoral level, I am hoping some creative children will go on to take the benefit of the other components of the INSPIRE scheme as well.

I congratulate all the young award winners of the Dr APJ Abdul Kalam IGNITE Awards 2017 and hope they would continue to be innovative.

With my best wishes to all

Prof. Ashutosh Sharma
Secretary,
Department of Science and Technology,
Govt. of India



PREFACE

I keenly look forward to IGNITE awards announcement every year because these ideas never fail to surprise and intrigue me. Ingenious ideas of young inventors and innovators overcoming inertia in so many fields inspire us deeply.

I am very happy that the National Innovation Foundation – India (NIF) has been able to bring out the hidden creativity of our children through the Dr APJ Abdul Kalam IGNITE awards year after year. IGNITE received an overwhelming response this year with over 65000 ideas submitted from all over the country.

It is heartwarming that NIF and Honey Bee Network (HBN) together have been able to identify many creative children

from remote and tribal areas and from disadvantaged sections of society. It would have been difficult to recognize them for their creativity without this unique platform. I compliment all the team members and volunteers associated with this effort.

I take this opportunity to thank our former President Shri Pranab Mukherjee ji for continuing to support the cause of innovations in the country. We are very grateful that he is giving away the IGNITE awards today. As the President of the country, he and his office had set an unprecedented tradition of giving a great traction to innovation in formal and informal sectors.

We are very privileged that Our President, Shri Ram Nath Kovind ji has continued the emphasis on inclusive innovations for integrated humanistic development for all sections of our society. The NIF would be working closely with the office of the President of India to continue the national movement started by the Honey Bee Network thirty years ago and taken forward in more concerted manner by NIF since 2002 during the Presidency of late Dr APJ Abdul Kalam

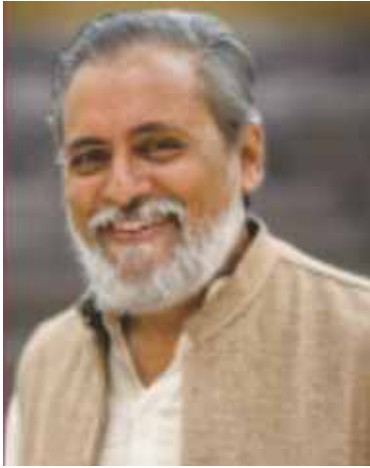
With both IGNITE competition and INSPIRE MANAK scheme, NIF has a big task cut out for itself. But having being associated with NIF since its inception and knowing the commitment of the team, I am absolutely sure that NIF will do all the justice to the effort. The promotion of the creativity of children is a cause close to the heart of all of us in NIF and HBN and we will remain committed to it always.

I warmly congratulate all the award winners and greet their parents and teachers who have allowed children to think on their own, be original and creative.

With all my good wishes and blessings to all

A handwritten signature in blue ink, appearing to read 'R. Mashelkar'.

Dr. RA Mashelkar, F.R.S.
Chairperson,
National Innovation Foundation-India



INTRODUCTION

Fertilizing Imagination of Children

Many parents are worried that children get highly stressed at young age because of various anxieties triggered by perhaps parental and/or social expectations. But they still don't provide enough opportunities to their children to relax by fertilizing their imagination, wander to wonder about nature, social diversity and even more importantly, so many unmet social needs still unmet!

Dr A P J Abdul Kalam IGNITE competition is organised by National Innovation Foundation - India (NIF) to unravel creative and innovative potential of the children. When this potential unfolds in the context of unmet needs of society, nature and even non-human sentient beings like pets/other

animals, it connects creativity with samvedana (empathy^[1]) or what we call in Honey Bee Network (HBN), samevdansheelsrijansheelta. Let us see some examples of such a concern.

Widely prevalent practice of throwing away waste soap water in cloth washing machine may not have bothered most of the manufacturer of such machines worldwide, but it did bother Ayushman, Odisha who suggested attachment of filtering and recycling system. One could also use such water perhaps for toilets and wiping floors. Shruti, also from Odisha is also worried about excessive use of water while taking a shower and suggested having monitor attached to the shower for the purpose. Will it not be nice if we all try to save water in every possible way by even setting targets, say 15 litre or one bucket per bath or even lesser. Digantika from Burdwan and Khushi from Sabarkantha, both don't like iron filings while drilling or dust scattering around causing hazard. They have thought of a collector attached to different kinds of drill, which has been missing from most drills. They even tried to fabricate one.

Helping blind people board the bus by getting a communication system between bus driver and such visually challenged people has been suggested by Ankit from Bangalore. If driver knew about such people waiting to board the bus, may be he/she will be more careful to help such people board and descend from the bus.

There were many other ideas suggested by children whether for stapling buttons, when we find them missing from a shirt or kurta (a problem often faced by me) or pant, or helping elderly people who lose their way while walking finding their way back to home.

IGNITE award function has become a national celebration of creativity by children from all over the country. One of the limitation has been that we have not been to get as many ideas from rural governments schools as from urban private or public schools. This is a lacuna that we will have to remove in coming years. Similarly, far fewer ideas are sent by such children who also try to make a proof-of-concept or prototype. May be Atal Tinkering labs set up by Niti Aayog will fill this gap in coming years. Unless we also create a connection between identification of unmet social, environmental, cultural and institutional needs, and the fabrication or maker culture, we will not be able to graduate to next level of innovation ecosystem. Slowly and slowly, such facilities are emerging which may enable children to give concrete form to their ideas. But for those children who don't have access to such facilities or skills, NIF does invite children interested in making new innovative and socially useful things to spend time at its Fab lab.

^[1] Empathy is not exact translation of Samevdana. Empathy is felt for others where as samevdana is within, when one internalises the pain of others as one's own. Then motivated by Swantayah Sukhay, pursuit of ones own happiness, 'leads to samevdansheel srijansheelta or sanshodhan, roughly translated as empathetic innovation.

The Honey Bee Network has also been organising children creativity workshop in collaboration with SRISTI, GIAN, NIF and UNICEF for last several years. Some of the most redeeming discoveries from these workshops are: little children who we treat as sink of sermons (they have to hear all the time, do this, do that!) are actually a very valuable source of ideas. They can not only identify the unmet social needs but also come out with very creative solutions which have many time escaped us, the elders with far higher exposure and experience. Children can also work collaboratively far more easily than us. Our egos often come in the way of forging creative and constructive teams. Children can identify the weakest link of a chain while we get stuck with a more obvious bottleneck, which may or may not be the root cause of the problem.

If the children have so many strengths, then what happens as they grow up? Our education system does not do enough justice to their curiosity about and concern for disadvantaged people, elderly, safety of workers, and non-human sentient beings like animals in society, environment under risk and wastage of resources. We have not even introduced lessons based children creativity in the school and college text books to boost their morale. We have not shared stories of how children ideas have triggered enterprises and licensing deals.

I hope that NIF team led by Dr Vipin Kumar and numerous volunteers of the Honey Bee Network will continue to search and spread good ideas from all over the country. They will set up Honey Bee innovation clubs in schools and colleges to not only search and spread innovations but also celebrate innovators by inviting them to schools and sense or scout the unmet social and environmental needs.

I congratulate all the winners and assure all those who did not that their ideas matter. Award or no award, what is important is to imagine a solution to one of the hitherto unsolved problems. By doing so, they have become a part of the national and global inclusive innovation ecosystem. NIF is developing new initiatives to engage with larger children community so that award don't remain the only focus. We will invite senior school students to join shodhyatras organised by SRISTI with close cooperation of all HBN institutions, mainly NIF and other volunteers.

Look forward to seeing all children participants in IGNITE and INSPIRE-MANAK competitions to become volunteer of the Honey Bee Network. INSPIRE-MANAK program aims to expand our reach to half a million schools of the country in an unprecedented initiative of Department of Science and Technology, Government of India. Please join us in making India Innovative and Inclusive.



Prof Anil K Gupta
Executive Vice-Chairperson
National Innovation Foundation, India

A WORD FROM THE DIRECTOR



In response to the call for entries for the Dr APJ Abdul Kalam IGNITE Awards 2017, over 65000 submissions of students from 576 districts of all the States & Union Territories of the country were received. This year, 56 students from 16 States and Union Territories are being recognized for their 29 ideas and innovations. I am grateful that our former President Shri Pranab Mukherjee ji has kindly consented to give away the awards to the students. Under his Presidency, a number of initiatives were undertaken to mainstream inclusive innovations and provide them a platform at the highest level. Apropos to inclusive innovations, he and his office expanded

the domain of the Presidency beyond what was happening before his time.

I take this opportunity to convey my sincere regards to the Hon'ble Minister of Science & Technology and Earth Sciences, Dr Harsh Vardhan ji and the Hon'ble Minister of State for Science & Technology and Earth Sciences, Shri YS Chowdary ji for their continued support and guidance to NIF. I am also grateful to Prof Anil K Gupta, Executive Vice Chairperson NIF, Prof Ashutosh Sharma, Secretary, DST, Dr RA Mashelkar, Chairperson NIF, and NIF's Governing Board Members for sharing their vision for NIF and providing support at all times.

I also deeply appreciate the support of the Central Board of Secondary Education (CBSE), New Delhi, Department of Education, A&N Islands, Haryana Board of School Education, Haryana, Mizoram Board of School Education, Mizoram, Odisha Directorate of Secondary Education, Odisha, Rajiv Gandhi Shiksha Mission, Chhattisgarh, Gujarat Secondary & Higher Secondary Education Board, Gujarat, Council of Higher Secondary Education, Manipur, Karnataka School Board, Karnataka, Nagaland Board of School Education, Nagaland and State Council of Education, Research and Training, Andhra Pradesh for the Dr APJ Abdul Kalam IGNITE campaign 2017. The contribution of Shri Hari Om Ashram, Surat for constituting Poojya Mota Prerit awards at NIF for best student ideas for everyday use and for children coming from tribal and far-flung areas is also appreciated.

I acknowledge and appreciate the efforts of my colleagues at NIF and the extended Honey Bee Network family for their persistent efforts to make Dr APJ Abdul Kalam IGNITE campaign successful.

My heartiest congratulations to all the award winners of this year's edition of the Dr APJ Abdul Kalam IGNITE awards. I hope that they will continue to observe problems and keep coming up with their own creative solutions. My compliments to the parents and teachers of the award winners as well and hope that they will continue to support their children's creative pursuits.

With my best wishes to all



Dr. Vipin Kumar

Director and Chief Innovation Officer

National Innovation Foundation-India

INDEX

Washing machine which uses recycled soap water	1
Speed indicator on the backside of vehicles	3
Watch with button for pungent spray on bullies	5
Attachment on drill machine to gather metal chips	7
Device to assist blind people board bus	9
Guiding system for Alzheimer patient if they get lost	11
Combined wood cutting and finishing system	13
School bag with foldable wheeled legs to distribute load	15
Note sterilizing machine in ATM	17
Saving water through usage monitor	19
Pothole detector in flooded condition	21
Dust collecting attachment for drill machine	23
Bicycle powered by compressed air	25
Smart wrist band for elderly	27
Wearable indicator to ensure body hydration	29
Gadget that helps people suffering from restless leg syndrome	31
Nail polish which indicates drugs/alcohol in drinks to prevent molestation	33
Mosquito net with mild electric shock	35
Brush and other devices for archaeological studies	37
Detection system in vehicles for speed breakers much in advance	39
Smart device for rag picking	41
Solar wetland leveller and trimmer	43
Stapler for buttons	45
Mechanism for unlocking car during fire	47
Intelligent sunglasses for blind	49
Mobile App for Ambulance aggregation	51
Expiry date stamping on eggs	53
Foot operated tea making table for differently abled people	55
Improved device for cleaning and fluffing cotton	57
Dr. APJ Abdul Kalam IGNITE Awards 2015	
IGNITE 2016	
IGNITE 2015	
IGNITE 2014	
IGNITE 2013	
IGNITE 2012	
IGNITE 2011	
IGNITE 2010	
IGNITE 2009	
IGNITE 2008	

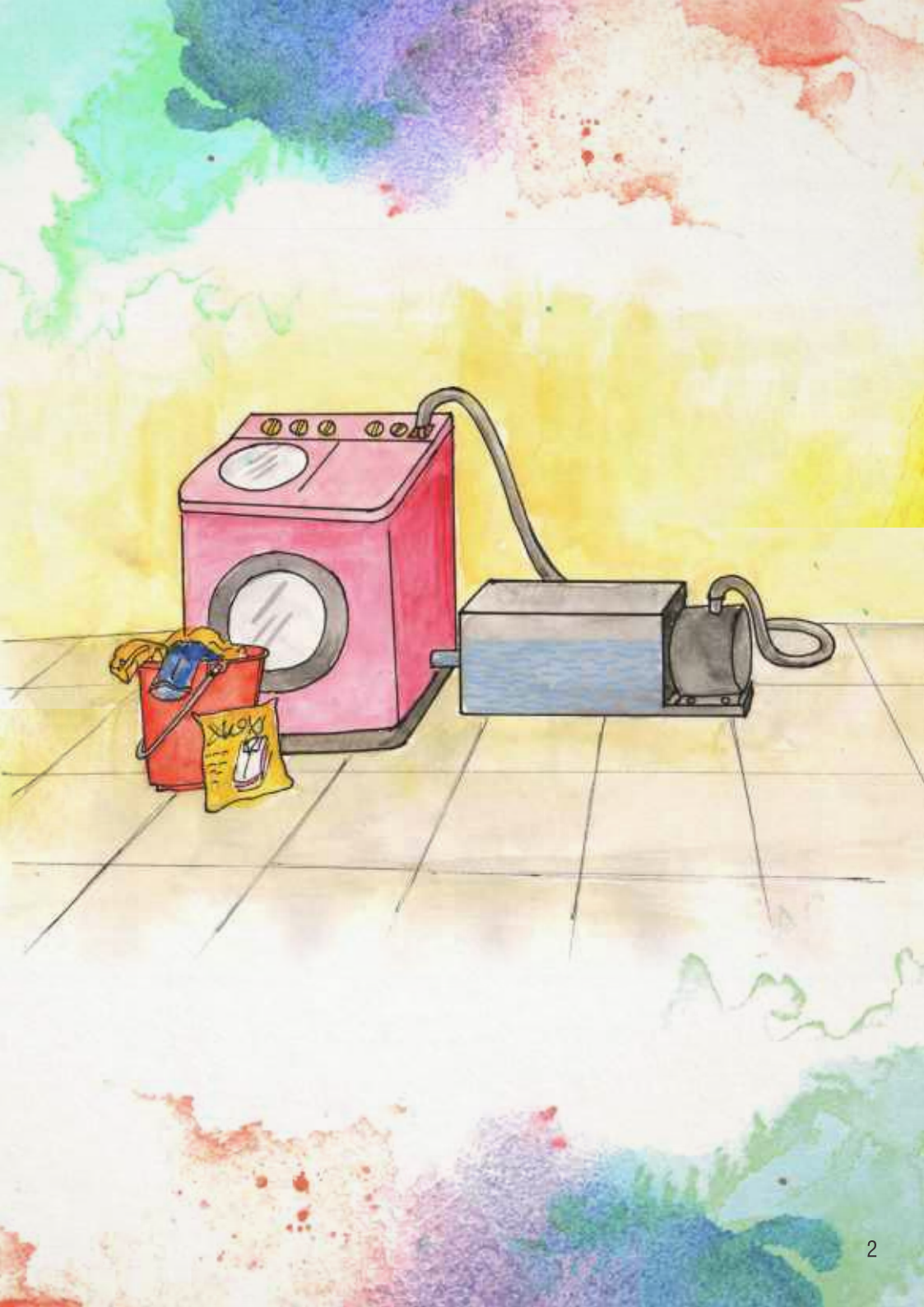
Washing machine which uses recycled soap water



Ayushman Nayak

Class 3,
KIIT International School
Khurdha, Odisha

Ayushman, who wants to become a mechanical engineer, has given an idea about a washing machine where the discarded soapy water could be reused thereby saving a lot of water. Painting is his hobby and he wants to create new technologies for the benefit of the people.



Speed indicator at the rear of vehicles



Ritwik

Class 4, Maxfort School
Delhi

Annoyed with the irresponsible driving behaviour of many drivers when they drive their vehicles swirlingly on the roads at varying speeds, Ritwik has come up with an idea to have speed indicators at the rear windscreen of the car. This will help the driver of the following cars to have an idea about the speed, acceleration and deceleration of the leading car so that appropriate decision to follow or overtake can be taken.

Ritwik likes to watch television and cycle around the country side. He has keen interest in automobiles and wants to become an automobile engineer.



Watch with button for pungent spray on bullies



Aparna Chandrasekar

Class 4, PS Senior Secondary School
Chennai, Tamil Nadu

Aparna has given an idea of a watch with in-built chilly spray, which gets automatically sprayed on the person who may be bullying the wearer. In such a situation generally the heartbeat and blood circulation increases, which triggers the sensor in the watch to release the spray.

She likes tennis and foot ball and is a story writer as well. All her stories have three characters namely Kathleen, Gerald and Jimmy even though these may be humans, dogs, cats or fish. She wants to be a space researcher when she grows up.



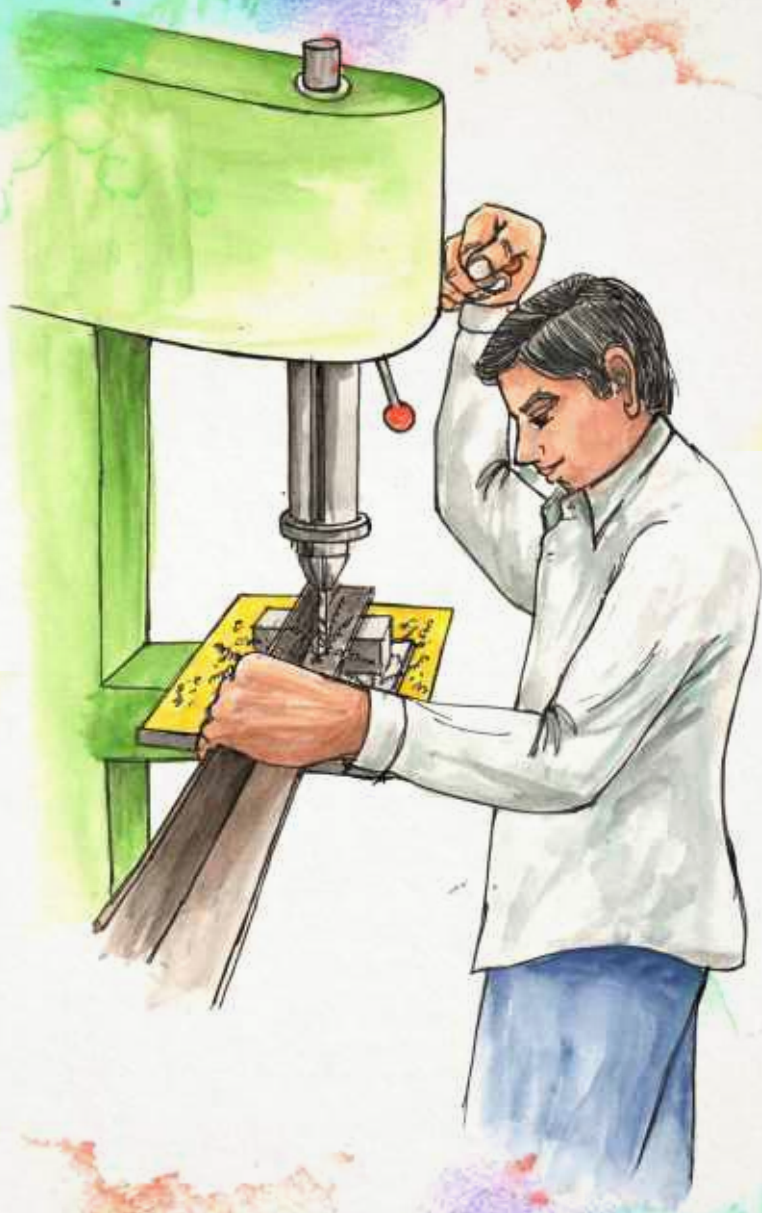
Attachment on drill machine to gather metal chips



Khushi Rajeshkumar Patel
Class 5, Chadarada Primary School
Sabarkantha, Gujarat

While drilling iron, many a times, metal debris produced can enter eyes harming it. Khushi has suggested having a magnetic debris collector attachment on the drill so that the debris does not fly off and hurt the user's eye.

Young Khushi likes to read books, watch TV and make drawings. She wants to become an engineer and then a teacher when she grows up.



Device to assist blind people board a bus



Ankit Singh

Class 7, Sishu Griha Montessori and High School
Bangalore, Karnataka

Using this device not only the visually challenged person gets an alert when a bus is approaching but also the driver of the bus gets a signal that a visually challenged person is waiting to board the bus, hence he can then stop the bus a bit longer ensuring that the person has boarded the bus properly.

Ankit has a lot of interest in quizzes and has participated in many inter-school quizzes. He is also regular participants in debates and extempore and has won many prizes as well. He also plays football and cricket and pursues studies on astronomy, which he plans to take up as a career later.



Guiding system for Alzheimer patients if they get lost



Reshma Khanam

Class 7, Balika Uchha Madhyamik Vidyalaya
Kamrup, Assam

Reshma's idea is about a guidance system for Alzheimer patient using which they can find their way home or alert his/her family or take assistance from any passer-by, if they lose their way. This would be a wearable device equipped with a GPS and a SOS button.

She enjoys drawing landscapes and desires to become a veterinarian. Young Reshma considers Indira Gandhi as her idol and wants to become a strong independent woman like her.



Combined wood cutting and finishing system



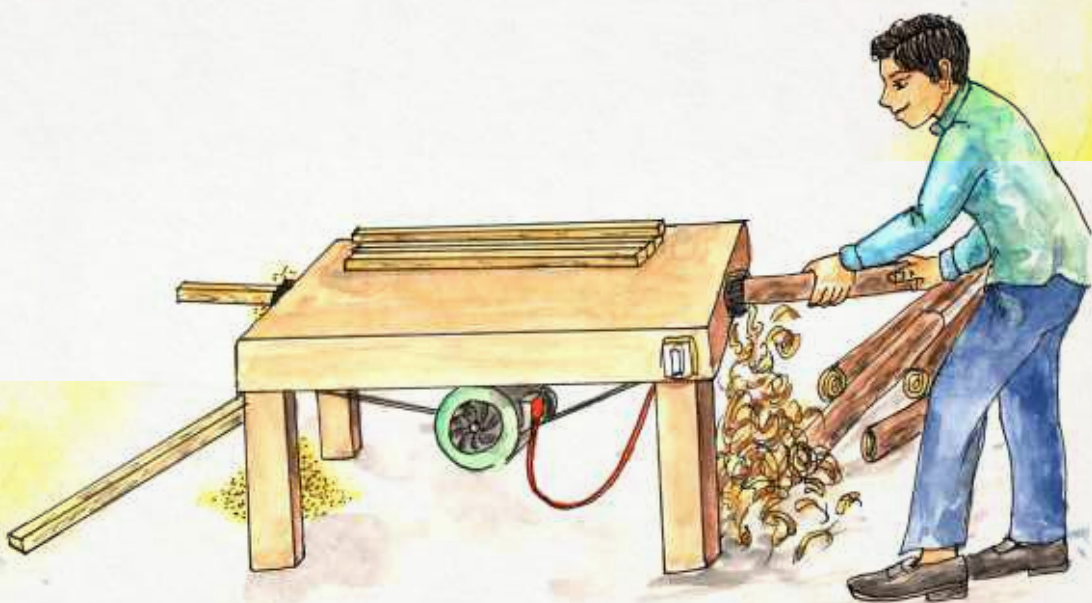
Sameer Gautam
Ramteke,
Class 6
Pawan Public School
Bhandara, Maharashtra



Vidhi Rajesh
Yelshettiwar
Class 8,
Pawan Public School
Bhandara, Maharashtra

After seeing some workers getting injured while removing the wood bark while processing wood Vidhi and Sameer started thinking of an idea to prevent mishaps and injuries. Their idea is to have a wood processing table where a log can be entered from one side, and chiseled log can be taken out from the other, with the processing unit in the table removing the bark and cutting the edges.

Both have interests in singing and reading however, Vidhi wants to become a civil servant while Sameer wants to be a scientist when he grows up.



School bag with foldable wheeled legs to distribute load



Sahil Raja
Class 8, Jawahar
Navodaya Vidyalaya
Murshidabad,
West Bengal



Md. Sahanowaj
Hossain
Class 8, Jawahar
Navodaya Vidyalaya
Murshidabad,
West Bengal



Nasiruddin Kabir
Class 8, Jawahar
Navodaya Vidyalaya
Murshidabad,
West Bengal



Arnab Ghosh
Class 8, Jawahar
Navodaya Vidyalaya
Murshidabad,
West Bengal



Md. Usman
Hanif Patel
Class 7,
Tapti Public School
Jalgaon, Maharashtra



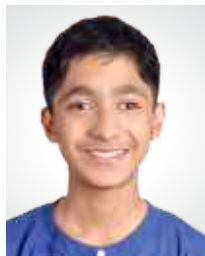
Rohit K
Class 12,
AVHSS PONNANI
Malappuram, Kerala

Tired of carrying heavy school bags, the children have thought about an idea to have foldable wheels attached to school bags so that part of the weight can be transferred to the ground while children carry their bags to/from the school.

Arnab likes to draw, paint and play cricket. He also enjoys writing stories and wants to become a doctor to serve people. Sahanowaj also likes cricket, writes poems and wants to become a software engineer. Like his friends, Nasiruddin is also an ardent cricket fan. He has an interest in science and wants to pursue medical. Sahil like to read a lot and play badminton; he also wants to become a doctor. Usman, who has also received IGNITE award earlier, aspires to become a fighter pilot. Rohit is a bright student excelling in extra co-curricular activities as well. He plays mridangam and violin and can sketch and paint too. He wants to serve ISRO as a scientist when he grows up.



Note sterilizing machine in ATM



Anudh Mishra,
Class 8, DPS Maruti Kunj
Gurugram, Haryana



Avnith Mishra
Class 8, DPS Maruti Kunj
Gurugram, Haryana



Kaustubh Bharadwaj
Class 8, DPS Maruti Kunj
Gurugram, Haryana

The three friends have conceived an idea of having three types of sterilizing devices with UV-C light to sterilise currency notes in an ATM. The first device sterilises the currency notes being withdrawn, the second one sterilises the notes being deposited while the third one is a stand along device not attached to the ATM, which can sterilise any other currency notes without using the ATM.

Anudh has interests in science, especially in chemistry and biology apart from astronomy. He is an artist and also plays harmonium, tabla, keyboard, etc apart from outdoor sports like football and lawn tennis. Though he has a lot of interest in astronomy, he wants to become a doctor. Avnith, twin brother of Anudh, likes to collect stamps of different countries. He has interests in mathematics, chemistry and astrobiology and likes adventurous activities like safari, river rafting, paragliding, hiking etc. During his leisure time, he likes to play lawn tennis. He wants to become a Mechanical Engineer. Kaustubh like mathematics a lot and can work on Abacus really well. He wants to become either a doctor or a chartered accountant.



Saving water through usage monitor



Shrutiparnna Ratha

Class 9, DAV Chandrasekhapur,
Khurdha, Odisha

Concerned with the wastage of water every day, Shrutiparna has thought about an idea to have a water usage monitoring system using which one can keep track of the usage of water i.e. how much has been wasted and how much has been saved. She suggests such a device can be wearable wrist band kind of a device as well so that it can record the usage anywhere.

Shrutiparna like sketching, drawing, writing poetry and aspires to become a civil servant to serve the society.



Pothole detector in flooded condition



Abhinandan Kumar
Class 9, Raj Stariya
Uchh Vidyalaya
West Champaran, Bihar



Joshita Sharma
Class 9, Jesus and
Mary School Chelsea
Shimla, Himachal Pradesh



Eshanika Priyadashini
Class 6, Bal Bharti School
Delhi

When the road gets flooded during rains, it becomes very difficult to ascertain if there are any open drains, manholes or potholes under water, resulting in many accidents. The students have individually thought about an idea to have a device in vehicles, which could detect such openings on road so that accidents can be prevented.

Abhinandan likes watching news/current affairs based programs and playing cricket. He wants to become the Prime Minister of the country so that he can contribute to the development of the country. With an interest in astronomy, Joshita also likes paragliding, poetry and social work. She has also formed an association named Baal Manch along with her friends. With keen interest in space, she wants to become an astronaut. Eshanika likes to play mobile games, badminton and carrom. She wants to become a Doctor, so that she can help the poor and needy.



Dust collecting attachment for drill machine

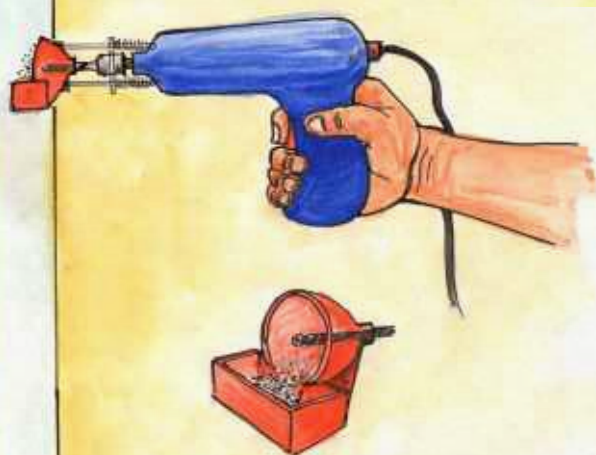


Digantika Bose

Class 9, Memari Rasiklal Smriti Balika Vidyalaya
Burdwan, West Bengal

Staying in a locality where many mechanics live, Digantika observed that the hand drills they used produced a lot of dust, which caused infection and allergies to them. She thought and developed an attachment for the drill machine, which could collect all the dust and debris.

Digantika likes creating innovative things and has already developed two tree climbers and a spectacle with a rear view finder. She also likes to paint and wants to become a scientist like Dr APJ Abdul Kalam.



Bicycle powered by compressed air



Tejaswani Priyadarshani
Class 9, Saraswati Shishu Vidya Mandir
Sundargarh, Odisha

Tejaswani has experimented and used compressed air to run a bicycle, which helps in commuting without physical stress and is environment friendly as well. Building this cycle required a lot of experimentation by her over a period of many months.

Singing, dancing and painting are her hobbies and she wants to become a scientist as she likes discovering and inventing new things.



Smart wrist band for elderly



P K Raghul
Class 10, Adarsh Vidya Kendra
Kanyakumari, Tamil Nadu

Raghul has developed a smart wrist band for the elderly where has integrated a fall alert, medicine reminder, pulse rate monitor, a SOS button, GPS based Alzheimer patient tracking system and some other functionalities helpful for the elderly.

He likes to read books and draw cartoons. He keeps a note of all the innovative ideas in a note book along with their sketches.

Raghul aims to become an innovator and commercialise innovative products that make the lives of people more comfortable.



Wearable indicator to ensure body hydration



Harsha Satpathy
Class 10, MCC Higher Sec School
Chennai, Tamil Nadu

Dehydration is something, which most people do not get much concerned about. However, optimum hydration is important for proper functioning of vital functions of the body. Harsha has thought about a device which could monitor and report the degree of hydration of the body.

Harsha, who wants to become a surgeon, has varied interests in tennis, poetry, food, music and singing. She plays carnatic violin and can sing in French, Tamil, English and Hindi and is planning to learn Arabic and Japanese.



Gadget that helps people suffering from restless leg syndrome



Aditi Bagri
Class 10, Carmel Convent School
Chandigarh

Aditi has conceived an idea of a tiny piezo-electric device with a small vibrator that could fit into a shoe. The idea is that whenever a person feels restless and starts shaking his legs obliviously, the device will produce sufficient current to activate the vibrator and alert the person to stop shaking his leg.

She likes listening to music, dancing and reading newspaper and wants to pursue a course in engineering for higher studies.



Nail polish which indicates drugs/alcohol in drinks to prevent molestation



Golakh Mohapatra
Class 10,
DAV Chandrasekhapur
Khurdha, Odisha



Siba Prasad Satapathy
Class 10,
DAV Chandrasekhapur
Khurdha, Odisha

Sometimes miscreants mix intoxicants in drinks and serve them to ladies to molest them. Golakh and Siba have thought of an idea of mixing a drug/intoxicant indicator in a nail polish so that when a lady dips her nail in the drink, a colour change of the nail polish would indicate the presence of the said drug/intoxicant.

Golakh likes to dance, paint, watch Hollywood movies and play football and wants to be an engineer and serve the Indian Army. Siba Prasad likes music and plays guitar. He wants to become a scientist and develop useful machines for the people.



Mosquito net with mild electric shock



A Lakshmana Rao
Class 9, Govt. High School
Guntur, Andhra Pradesh



A James
Class 10, Govt.
High School
Guntur, Andhra Pradesh



Hridyesh
Class 10,
DAV Public School
Hazaribagh, Jharkhand

The students have thought of having electric mosquito nets put up at the windows and ventilators to prevent the entry of mosquitoes in the house thereby preventing spread of diseases like malaria/ dengue to some extent. The electric current should be mild so as to not harm children or pets.

James play volleyball, reads books and wants to work with the Indian Railways. Hridyesh plays chess and has a youtube channel of his own where he reviews new products. He wants to become an astronaut. Lakshmana likes playing kabaddi and wants to be a police officer.



Gasha 4-in-1: brush and other devices for archaeological studies



Aman Kunder
Class 10,
G M Vidya Nikethan Public School
Udupi, Karnataka

Aman has come up with a hand tool using which one can clean tiny openings, joints, cracks in small objects like watches or parts of devices like radio, printers, computers where normally fingers/cloth cannot reach. The tool can also be used as an archaeological digger and has LED light for use in dark.

Having an innovative bent of mind, Aman wants to become a space scientist.



Detection system in vehicles for speed breakers much in advance



Iqrar Ahmad Dev
Class 11,
Government Higher Secondary School
Budgam, Jammu & Kashmir

Iqrar realised that sometimes vehicle drivers may not be aware of a speed breaker especially if white stripes are not painted on it. As a result mishaps may occur. The situation may be more problematic if an ambulance driver fails to recognise a speed breaker and jumps over it. To solve this, Iqrar has suggested a device that can identify the presence of a speed breaker ahead from a few meters and alert the driver.

Eldest of four siblings, Iqrar has an interest in electronics and wants to become a scientist. He is good in academics and mentions that the level of concentration during studies matters more than the duration of the study.



Smart device for rag picking



**Subhra
Suchismita Patel**
Class 11,
KIIT International School
Khurdha, Odisha



Maidari Devi
Class 9, GG High School
East Godawari, Andhra Pradesh

The students have conceived an idea of a device that could automatically pick up reusable and recyclable waste so that it eliminates the need of actual physical touch by the rag picker. This would be helpful in preventing infections, diseases and allergies for the rag picker.

Subhra loves to paint, design jewellery, read novels and explore subjects involving mysteries. She wants to be a researcher so that she can lead her life exploring one thing or the other. Maidari likes reading books and painting and wants to become a doctor and serve people.



Solar wetland leveller and trimmer



S.A. Sivasoorya
Class 11,
Velammal Matriculation
Higher Sec School
Chennai, Tamil Nadu

There are no tools available for levelling wetland for paddy farming for farmers with small land holding and they generally have to use bullocks with a leveller attached to do the same. With bullocks becoming scarce and tractors not affordable, farmers have to face a lot of problems.

Sivasoorya has developed a solar operated device for the purpose, which can cover an area from half an acre to five acres. Activities related to pre-paddy plantation and pre-cotton seed plantation in dry land can also be undertaken using other attachments designed for the purpose. He has wide ranging interests from painting, drawing, singing, elocution to science and space projects and has won a lot of awards for the same. He wants to become a scientist in agriculture, space or medical field.



Stapler for buttons



Dev Desai
Class 10,
Wisdom High International
School, Nashik, Maharashtra



Pranav Somasekhar
Class 11,
Naval Children School
Ernakulam, Kerala



Sayan Chaudhary
Class 12,
Delhi Public School
Delhi

The children have independently thought of an idea to have a stapler kind of device for putting buttons on clothes to make the process faster and easier.

Dev likes to read books and listen to music. He wants to become a researcher in the medical field. Pranav likes to play badminton, swim and read books on different topics. He wants to serve the country as a Naval Officer. Sayan has an interest in new and emerging technologies and like to keep himself abreast of all the recent developments in technology field. Pursuing his interest, he wants to be a computer scientist.



Mechanism for unlocking car during fire



Sanoj Kumar
Class 11,
Baldev Inter High School
Patna, Bihar



Ayan Aryan
Class 12,
MGM Higher Sec School
Bokaro, Jharkhand

The students have given the idea about a mechanism through which the doors of a car can be opened incase of a fire outbreak in the car. The trigger for the idea was occasional news on TV about cars catching fire and people getting trapped inside the same.

Sanoj likes painting and wants to join the Indian Army whereas Ayan likes gardening and wants to be an automobile engineer.



Intelligent sunglasses for blind



Anang Tadar

Class 12, New Galaxy Academy
Papum Pare, Arunachal Pradesh

Always curious about gadgets Anang first decided to develop an aid that assists blind people when a visually challenged lady asked him for direction. His innovation is a smart assisting aid that helps blind people navigate their surroundings. The goggle uses the principle of echolocation used by bats to detect and locate any obstacle in front of the wearer such as electric poles, sign boards, people etc. and alarms the wearer through vibration. The closer the user gets to an obstacle, the stronger the vibration becomes. Inspired by Dr. APJ Abdul Kalam who always encouraged young students to think innovatively and contribute to the field of science, Anang has a number of other science and technology based projects to his credit as well.



Mobile app for ambulance aggregation



Shreeyash Gotmare
Class 12, Pace Junior Science College
Raigarh, Maharashtra

Witnessing an accident where medical aid could not reach timely, forced Shreeyash to think about this solution. His idea is to have an ambulance aggregator mobile app, which could indicate nearest ambulance and hospital so that in an emergency it can be contacted.

Shreeyash has a lot of interest in computer science and likes working on algorithms, codes, cryptography, data structures, etc and wants to pursue a doctorate in computer science. His other interests include rock music and playing guitar.



Expiry date stamping on eggs



Shaik Subhani
Class 12,
Sri Chaitanya Intermediate School
Guntur, Andhra Pradesh

Raw eggs have a shelf life of about three weeks under continuous refrigeration. Stamping of date of expiry would enable consumers pick the right egg for consumption. Subhani has thought of a glove using which not only one can pick up and examine an egg but also date-stamp it.

Subhani's hobbies include playing cricket, attending science exhibitions and reading magazines. He wants to join DRDO and develop products for the Indian Army.



Foot operated tea making table for differently abled people



Sabuj Saikia
Class 12,
Maharshi Vidya Mandir
Sr Sec School,
Kamrup, Assam



Kaustav Moni Malakar
Class 12, Maharshi Vidya Mandir
Sr Sec School
Kamrup, Assam

Sabuj and Kaustav have developed a foot operated tea making table for differently abled people. They noticed that there are quite a few assistive aids to help the differently abled move around, but hardly any to equip them financially. Tea is widely consumed in Assam and by the road sides they are numerous small tea stalls, which generate income for many. By developing an assisting table operated by foot, they want to create an opportunity for differently abled people who can be financially independent through their innovation.

In order to take their idea forward they wish to commercialize their innovation. They also hope that the government will support the initiative so as to enable people with disability live with dignity. Sabuj and Kaustav aspire to excel in the field of energy and computer science respectively.



Improved device for cleaning and fluffing cotton



Dipak
Rajubhai Marsuniya
Class 11, Government
High School,
Surendranagar, Gujarat



Ketanbhai
Chamanbhai Baraiya
Class 9, Primary School,
Sodhi, Ahmedabad,
Gujarat



Kuldeep
Chandubhai Dantani
Class 8, Maharshi Atri
Tapovan,
Gandhinagar, Gujarat



Lensy Patel
Class 9, Shri K M Patel
Vidyamandir,
Sabarkantha,
Gujarat



Neel
Chandubhai Ramoliya
Class 7, Dahisarda (Und)
Primary School, Rajkot,
Gujarat



Nensi
Aravinbhai Sachpara
Class 8, Model School
Hadmatiya, Bhavnagar,
Gujarat



Nilesh Hemani
Class 7,
Divine Touch
International School,
Banaskantha, Gujarat



Pareshbhai
Chhanabhai Trentiya
Class 9,
Shri KGS High School,
Surendranagar, Gujarat



Pradeep
Rameshbhai
Chaudhan
Class 8, Garajiya
Primary School,
Bhavnagar, Gujarat



Rohan
Dharmendrabhai
Bhagora
Class 10,
Gramshala Vidhyalaya,
Gandhinagar, Gujarat

The students have observed the working of cotton cleaning and fluffing device and suggested improvements during Children's Creativity workshop by SRISTI. In this improved device, the input flatbed in original machine has been replaced by a slanting duct to ensure zero spillage of raw cotton thereby preventing wastage. On the output side the curtain has been replaced by a sliding door to prevent the escape of cotton fibres through curtain slits. Accumulated raw cotton on the input side can now be cleared using brush into the duct, preventing hand injuries for the operator. Dipak likes studying and making new things; he wants to become a mechanic so that he can mend things and solve people's problems quickly. Ketan and Paresb want to be a teacher. Kuldeep and Rohan both like Kabbadi and Cricket, and want to become a scientist and a police officer respectively. Lensy like travelling, painting and dancing. She wants to be a doctor so that she can help the needy. Neel and Nilesh like observing and making new things and want to become an engineer. Nency and Pradeep like painting and studying, and want to become a scientist.



IGNITE 2016

Emergency indicator in two wheelers

Pranav S and Gayatri S, Kochi, Kerala

There is a system with an emergency light or siren on the two-wheeler. It would get activated upon accident and alert approaching vehicles about the same.

Tiffin box that reminds one to wash hands

Sheereen Shaikh, Nizamuddin West, Delhi

Her idea is to have “wash hands before lunch” printed on the cover of the lunch box, and on the inside cover, “wash your hands after eating your food”.

Monitoring device to stop mishaps in vehicles

Arijita B Patra, Angul, Odisha

This is a device that could be fitted inside a vehicle to detect any sort of mishap. It would alert anyone within a range of one kilometre that inmate of the vehicle, say a woman, is in danger. Nearby people, commuters and/or police may come to rescue the person, thus preventing any untoward incident.

Real-time data transmission system in electronic voting machines (EVMs)

Roshan Sodi, Sukma, Chhattisgarh

This is a system in the EVMs which can transmit the total number of votes directly to the cloud server as the voting proceeds and also to district Election Commission office, if required, at regular intervals.

Omni-directional air cooler

Muskan Jawalkar, Hoshangabad Madhya Pradesh

This is an alternative to existing air coolers, it throws cool air in all directions.

Septic tank level and pressure indicator

Indu Manikpuri, Dantewada, Chhattisgarh

This is a system for recording pressure in septic tanks, aims to warn of the impending problem well in time so that the tank can be drained before it is too late.

Manual hand lever-based Tapioca plant uprooter/digger

S Vanchinathan, Tirupur, Tamil Nadu

This is a device with an easy hand lever-based digger for uprooting tapioca plants. The device has reduced drudgery involved in the job and fastened the operation.

Container cleanliness indicator

Maidari Devi, Rajamahendravaram, Andhra Pradesh

Utensils with some residues of cleaning soap or even with other marks makes one wash them before use. This device indicates the level of cleanliness of utensils. This is beneficial for maintaining good health and keeping the environment safe.

Pedal-operated vegetable-cutting machine

Dhanurjaya Dehury, Bhubaneswar, Odisha

This is foot pedal operated machine for cutting vegetables in desired size and shapes. The machine is cost effective and helps minimise drudgery.

Machine to dig out sweet potato

Sebati Kutruka, Bhubaneswar, Odisha

The digger is operated by spring mechanism with a rod, so that using lever mechanism, sweet potatoes can be dug easily.

System to protect turtle eggs

Sumit Biswas, Diglipur, Andaman and Nicobar Islands

Every year, in the coastal regions of India, different species of sea turtles lay eggs. Most of these are preyed upon by animals such as dogs or snakes and even humans. Sumit suggested to insert a buzzer or light-indicating sensors into the breeding pits. These sensors will be connected to the regional forest department and will alert them in case of any disturbance.

Proximity alert system in non-transparent doors

Sayan Sain, Kolkata, West Bengal

This is an alarm/sensing system that can sense any physical presence on the other side of the door and give indication to the person opening the door.

Safety device for doors, specially in automobiles

Munni Kumari, Patna, Bihar

Dev Umang Desai, Nashik, Maharashtra

The device has a sensor, attached on the car door, which would prevent the door from closing if there is any obstruction.

Eco kite: Dispersing seeds randomly

Manodnya S Vaidya, Nagpur, Maharashtra

Two or more straws filled with seeds are fixed near the vertical axis of the kite. The mouth of straws should be closed with paper knobs, which will automatically release due to heavy high-altitude air flow. The kite soaring high in the sky would help in dispersal of seeds in inaccessible areas.

Utility stick for Parkinson's patients

Parth Bansal, Noida, Uttar Pradesh

The walking stick has a laser light in front of patients on the ground, which appears like an obstacle. The patients may be able to take their first steps this way.

Home-made cockroach-icide gel

Jahnvi Ruparelia, Rajkot, Gujarat

To control multiplication of cockroaches, Jahnvi has prepared a home-made low-cost paste. This paste attracts cockroaches and can kill a whole colony of the pest.

Water supply line with flow feedback system

Adyasha Dash, Bhubaneswar, Odisha

Sagar Kumar, Patna, Bihar

This is a way to improve the water flow system which can regulate and control the flow if the tap breaks or gets damaged. The system has a siren that indicate any leakage from the pipes. It can be fixed in houses and offices.

Television with programmable alarm System

Himanshu Rateria, Bhubaneswar, Orissa

On pre-set times, the reminder pop ups multiple times on the screen, blocking the faces of the TV actors thus irritating the viewer. This can help the viewer in timely consumption of medicines.

Fuel wastage alert system in vehicles

Priyanka Panda, Bhubaneswar, Odisha

Whenever a vehicle's engine is idling, a message/alert is displayed next to the odometer. It display a warning message and trigger the rider's conscience to stop the engine.

Shoes with seed drill for farmers

Subhra Suchismita Patel, Bhubaneswar, Odisha

The shoes have drills fitted into them so that farmers can simply walk and dig holes in the field simultaneously. The shoes also contains seed compartments so that they can be easily sown. The rear part of the shoes have brushes to cover up the holes in which seeds have been sown.

Adjustable wheelchair

Joseph John, Kottayam, Kerala

This a wheelchair with provision of adjusting its height. The features of the chair can help in aligning it with the seat of the car.

Namda rolling machine

Zufa Iqbal, Srinagar, Jammu and Kashmir

The namda rolling machine takes almost seven to eight minutes to make a simple namda (woolen carpet). The washing and designing process is also finished within 15-20 minutes.

Automatic light intensity-adjusting system for study

Gulshan Kumar, Kushinagar, Uttar Pradesh

The device can assess the surrounding quality of the light and accordingly adjust its intensity to desired intensity. This device can also alert students if the intensity of light is inappropriate for studying, thus maintaining the health of the eyes.

Automatic blanket covering mechanism

Govind Kailash Sharma, Gandhinagar, Gujarat

This is a bed with a mechanism that covers the person with blanket automatically. It is actuated on reaching pre-set time or temperature. It is very useful for the aged, differently-abled and the patients.

Paan delivery and processing machine

Lahar Jyoti Das, Kamrup, Assam

The machine can deliver seven sweet paans in about four to five seconds. The processing system prepares the mixture within 10 seconds, after which the paan is folded manually and automatically served to the customer through the delivery system.

Secured currency notes

Madhur Gupta, Chandigarh, Punjab

This is idea of printing a simple QR code on the currency note, similar to courier companies. By printing a unique QR code on every high-valued currency note, one can easily track records of transactions.

Cross-platform mobile app for encouraging tour in North-east India

Bilash Dutta, Cachar, Assam

This is a cross-platform, mobile app-based game (running on Android, Windows and iOS), designed in a manner that will tempt the players to visit the region.

Device for data management to enhance cellular efficiency in rural areas

Sayan Chaudhary, Rohini, Delhi

This mechanism is useful for areas where a reliable cellular connection is not present. So, each village can have an active cache which can store pages that are required from the internet. If someone has to access something new, s/he submits a request to the local server. Once the server is upgraded after taking it to the city, the information is updated and made available to the users.

IGNITE 2015

Solar thresher

Dipankar Das, Diglipur, Andaman & Nicobar Islands

A solar thresher for efficiently threshing pulses and grains such as green gram, black gram, pigeon pea and horse gram, without using electricity or fossil fuels.

Fruits - natural or poisoned?

Neha, Jalandhar, Punjab

Neha made a paper, which looked like a litmus paper, to distinguish between artificial sugar and natural sugar.

A colour-coded thermometer

Janmejay Singh Rathore, Bengaluru, Karnataka & Jaspreet Kaur, Jalandhar, Punjab

A colour-coded thermometer, which not only gives temperature — red for emergency, orange or intermediate and green for normal temperature — but also gives out precautionary measures and even dials an ambulance in case of an emergency!

Alert system for injured animals

Diva Sharma, Vasant Kunj, New Delhi

An application which records the respiratory rate, temperature, pulse rate and heart beat of animals through sensors attached to their bodies, making it easier for doctors to detect an emergency.

Foot-operated door opening mechanism

Jayprakash B Rathava, Gandhinagar, Gujarat & Tanmay Takale, Pune, Maharashtra

A mechanism through which a door can be opened by activating a sensor using a leg. While this mechanism is most useful in public toilets, it can also be used elsewhere and may be useful for the physically-challenged or someone carrying load in both hands.

A punching machine with hole reinforcement mechanism

Tanmay Takale, Pune, Maharashtra

Tanmay proposed a punching machine with a hole reinforcement mechanism so that the punched holes last longer and do not tear off from inside. The machine not only punches holes in the paper but also attaches a ring-like sticker on the hole to keep the paper from tearing.

Bionic body suit

Ayush Gupta & Arnov Sharma, Haridwar, Uttarakhand

The duo has designed a mechanical body suit that can provide support to a physically-challenged person or aid orthopaedic patients. The suit supplements the movement of the upper skeleton system. The students used recycled materials, motor parts and other scrap to make the prototype.

Low-cost grass and leaf-cutting machine

Sapir Debbarma and Klishan Debbarmal, Champahour, Tripura

The duo proposed a hand-held cutting machine for grass and leaves which can be carried easily and used anywhere.

Smart walking stick

Siddhant Khannal, New Delhi

A walking stick with many features like counting of steps, fall detector, emergency alarm, automatic torch and even medicine reminder and locator

Carry your own door latch while travelling!

P S Senthur Balaji, Erode, Tamil Nadu

A portable latch, which can be carried by people travelling frequently

Soundproof hammer

Prithwish Dutta, Howrah, West Bengal

Prithwish came up with the idea of a soundproof hammer through which the noise level of a hammer can be reduced to its minimum. The sound proof hammer would be covered with a foam-like substance which would absorb the impact when struck against any object.

Water filter/purifier at source

Soring Lepcha & Subash Prodhan North Sikkim, Sikkim

Both the children have given an idea to have filter/purifier at the source of water so that everyone has access to clean water, without having to make an investment in purchasing a filter/purifier individually.

Watch with medicine delivery system

Navjot Kaur, SAS Nagar, Punjab & Vaishnavi Patra, Khorda, Odisha

Two students, Navjot and Vaishnavi, have individually suggested the idea of a watch which can store and timely deliver the appropriate dose of medicine to the requested person.

Lac extraction machine

Sourav Dey, Barajamda, Jharkhand

A machine that peels lac from branches of trees and plants without breaking them. As a result, the amount of impurities is lesser in the extracted lac and it takes lesser effort to clean it.

Pay as you weigh

Rishab Mallick, Kolkata, West Bengal

One needs to pay only as much as s/he weighs

Loom for physically-challenged

R Elakkiya and R Pavithra, Erode, Tamil Nadu

A loom for lower limb physically-challenged. In their loom, they have replaced the pedal-operated system with a motor and a gearbox attached to a pulley mechanism.

Machine to pluck tendu leaves

Bharat, Dantewada, Chhattisgarh

A tendu leaf-plucking machine which can cut the leaves and collect them in a container. He also suggests a sorter which can separate the leaves according to their sizes

A device to collect mahua flower from ground

Lipsa Pradhanl, Kamgaon, Odisha

The device, which looks like a lawn mower, has a handle to help pick up the fallen mahua flowers.

Pass code-based locking system in gas stove

Nim Lhamu Lepcha, North Sikkim, Sikkim

A manual or digital pass code system to switch gas stoves on, thus preventing mishaps involving children.

Spectacle microscope

Hadasha Rongmei, Dimapur, Nagaland

A mini microscope that can be worn like spectacles

Pebble-indicating system for cooking vessel

Mohammad Tawseef Thokar, Kulgam, Jammu and Kashmir

A vessel with sensors which can indicate the presence of pebbles or similar impurities in rice or other food grains being cooked.

Gas lighter with gas leak alarm

Nilesh Raj, Patna, Bihar

A gas lighter which can sense and indicate gas leakage before it is lit, thereby preventing accidents.

Innovative dustbin

Prem Ranjan Singh, Shivani Singh, Ankush Pal, Daman, Daman & Diu

A dustbin with separate slots for biodegradable and non biodegradable waste, with a message-sending facility to the municipality once dustbin is filled up to a preset level.

Seed container that indicates growth of germs

Dipti Manjari Dakua, Nayagarh, Odisha

A seed container which can detect the decrease in temperature of the container, thereby indicating the growth of organisms inside it.

An umbrella you can share

Tarna Joy, Dhalai, Tripura

A large umbrella which could be held by two children from two sides under which other children can stand and go to school together without getting

Park benches that can flip

Simran Chadha, Ludhiana, Punjab

Reversible benches which can be flipped using a handle so that the other side comes up

Solar seeder

Subash Chandra Bose, Pudukkottai, Tamil Nadu

A solar-powered seed drill which can work for different size of seeds at variable depth and space between two seeds while planting

Alerting system for bus drivers

Pradyumna Pal, Bhubaneswar, Odisha & Rahul Kumar, Patna, Bihar

An alerting system for the bus driver which enables him to know which passenger has put his hand or head outside the bus window

Drawbridge door for trains

Ram Akash, Kanyakumari, Tamil Nadu & Nimisha Katyayan, Ranchi, Jharkhand

The drawbridge door, when opened onto the railway platforms, acts like a ramp, making it easy for passengers to walk aboard the train with their

Printed paper-reclaiming machine

Aravind Gopalakrishnan, Chennai, Tamil Nadu

A printer-like device which can erase all data on a printed page fed to it, thus making it plain and reusable

Hand rest for fractured hand

Adi Kumar, Bengaluru, Karnataka

A waist worn appendage which can provide support to a fractured hand instead of the sling

IGNITE 2014

Cylindrical-shaped refrigerator with rotatory trays

Sarthak Shukla, Ghaziabad, UP

The idea is to have cylindrical refrigerator with rotating trays which will be helpful in picking up the things placed at the backside of tray, without disturbing the things placed in the front while picking out stuff from the refrigerator.

Hygienic cloth hanger

K B S Suresh, Prakasam, Andhra Pradesh & Kota, Rajasthan

The idea is to have a hanger which would release UV or any other anti-bacterial rays that will kill bacteria of the clothes keeping our clothes always fresh and germ-free.

Microphone that adjusts the volume according to user's voice

Sharvari Tambat, Nashik, Maharashtra

The idea is to have a microphone which catches the sound waves produced by our voice and according to our loudness/pitch, it will adjust the sound output automatically to a preset decibel level.

App for mutual calling intimation

Jenish Shah, Surat, Gujarat

An application which sends message that "Do not call, I am calling back", when both receiver and caller try to call each other simultaneously and the number appears to be busy.

Voice modulation system

Rinku S Rajpal, Ahmedabad, Gujarat

A voice modulation system that can be fixed near our mouth and neck so that if we speak loudly beyond a certain level, in anger or while shouting, then it pinches our ears and reminds us to check our voice and bring it back to the normal.

Provision of fourth (blue) light to reduce traffic jams

Adarsh Barnwal, Katihar, Bihar

The idea is that in addition to the three signals in the traffic light, there should be a provision of fourth signal, may be blue in colour, which would tell commuters that the road ahead has a traffic jam. one may thus take alternate routes then. This will also help in checking that the jam is not further congested.

Height-adjustable wash basin

Akanksha Guha, Pauri Garhwal, Uttarakhand

The idea is to move the complete set up of wash basin vertically up and down so that persons of different heights or children can use it comfortably according to their height.

Inclined installation of water taps at schools and other public places

Chhaya Thakor, Gandhinagar, Gujarat

The idea is to have taps fitted on an inclined pipe so that they are at different heights. This will enable people of different heights to drink water easily from tap according to their reach.

Mobile/laptop-charging adapter with inbuilt power pack system

Rohit Tiwari, Bokaro, Jharkhand & Abid Khurshid, Kulgam, J&K

The idea is that the charger/adapter may have an inbuilt battery so that it may also get charged while charging the devices.

Automatic railings at railway platforms

Ram Nikash, Kanyakumari, Tamil Nadu

The idea is to have automatic railings at the edge of railway platforms so that people can be prevented from crossing the railway tracks.

Movable seat for physically-disabled in cars

Khushkumar Patel, Ahmedabad, Gujarat

The idea is to have movable seats in four-wheelers so that they can be rotated on their axis and pulled outside. Person can then sit on it easily, push the seat inside and rotate back to the normal position.

Modified life-saving device for swimming beginners

Yatharth Saxena, Samraddh Saxena, Pantnagar, Uttarakhand,

The idea is to have a device which can set off an alarm if the swimmer is under water more than a preset duration, which is based on his/her breath-retention capacity.

The biofertiliser from cockroaches

Ananya Jain, Chandigarh

She has done an experiment wherein she has obtained better growth of potted plants by using excreta of cockroaches as fertiliser.

Foot-operated manual page-turning machine

Swapnanil Talukdar, Kamrup, Assam

This is a machine that can turn or flip the pages of book. The operation is controlled manually by foot and requires no power. It provides efficient solution to people who are unable to use hands to read book.

Wrapper picker

Mukul Malviya, Diptanshu Malviya, Sirohi, Rajasthan

It is a motor-operated device with brushes/combs at the base which helps picking up wrappers from the ground and collecting them in a bin.

Detachable device for the bicycle, enabling user to ride with one leg

Shubh Dholakiya, Rajkot, Gujarat

One pedal is replaced by a clamp attached to a piston rod assembly. The rider has to move only half the rotation of the pedal, the remaining half is rotated automatically due to the attached piston where a spring gets coiled during the first rotation.

Portable wi-fi stick with rechargeable batteries

Hrishit Shah, Vadodara, Gujarat

The idea is to have small rechargeable batteries in a wi-fi dongle so that they can be used anywhere easily.

Advanced Wind turbine

Vidit Laad, Indore, Madhya Pradesh

It is a multi-directional windmill which has a wind concentrator to create high wind speed.

Modification in shoes to alleviate knee pain

Shaik Muzammil Pasha, Hyderabad, Telangana

A new and improved version of shoes with a negative heel (by lowering down the region of the sole where heel is placed) to move the gravity line on the strong muscles behind the knee cap from the patella, which is the primary cause of knee pain.

Improved batteries with fast charging

Yash, Kolkata, West Bengal

He has experimented and developed batteries which can be easily charged at a much faster rate than the conventional ones. He claims to have achieved this using 2D graphene.

Advanced helmet for mine workers

Preyansh Kotecha, Karan khatri, Vadodara, Gujarat

The students suggest a helmet for mine workers, using which their location inside the mine can be identified. The same can also be used for communication purpose if required.

All-in-one stapler (for all sizes of pins)

G Vasanth & D Keerthivasan, Thiruvavarur, Tamil Nadu

The idea is to have a stapler where pins of all sizes can be used and one does not need to change the stapler for pinning paper stack of different thickness.

IGNITE 2013

Puncturing mechanism for water bottles

Shibajyoti Choudhury, Rajashree Choudhary, Jabalpur, Madhya Pradesh

A stay-tab like mechanism, like the one in juice cans, at the bottom of water bottle to puncture it. This will make the bottle unusable and prevent refilling/misuse.

Posture-correcting chair

Kulsoom Rizavi, Lucknow, Uttar Pradesh Tarun Anand, Ghaziabad, Uttar Pradesh

A chair with sensors at appropriate places which may alert if the user is sitting in a bad posture. Now, your chair will only allow you to sit straight on it!

Air-conditioning system in scooter/motorcycle

Masira bi Hanif Patel, Jalgaon, Maharashtra

A small modified AC, connected to engine, which provides cool air circulated through tubes woven into a wearable jacket. Beat the summer heat while travelling on your two-wheeler using this cool AC jacket.

Modified hand-cart with steering mechanism and brakes

Md Usman Hanif Patel, Jalgaon, Maharashtra; Nidhi Kumari Gupta, Muzaffarpur, Bihar;

Pavithra R, Erode, Tamil Nadu & Vidya Ramesh, Bengaluru, Karnataka

Incorporating easy-steering mechanism and brakes to make turning hand-carts easy and arrest slide on inclines respectively.

Device to indicate sudden fall or onset of convulsions/seizures

Soumya Ranjan Behera, Jagatisinghpur, Orissa

A wearable device that alerts if user falls suddenly; useful for old people and those suffering from fits, convulsions, seizures, etc. This will help keep an electronic eye (if integrated with mobile) on your loved ones and find out if they are okay or not.

Automatic spike system near traffic signal

S Siva Mahima, New Delhi & Shameet Badarla, Hyderabad, Andhra Pradesh

Retractable spikes before the zebra crossing that come out when the traffic signal is red, to prevent signal jumping by vehicles. Now, wait till the traffic light gets green or risk getting your vehicle punctured.

Sensor to correct body posture/regulate viewing distance

Sunvi Agarwal, Chandigarh

Light/touch sensors integrated in a seat. When user bends forward or moves to take an alternative posture, the sensors detects the motion and put the TV on standby mode.

Indicator for 'dead' landline phones

Nidhi Gupta, Ahmedabad, Gujarat

Light/sound alert that informs user when the phone gets 'dead' so that something could be done quickly without missing important calls.

Multicolour headphone wires

Swetleena Zenith, Allababad, Uttar Pradesh

The cords/wires of the headphone may be of different colours so that untangling them becomes easy. A simple solution to an everyday problem faced by many of us.

Mobile phone with inbuilt charger

Siddharthan and Karan, Vellore, Tamil Nadu

A charger pin unit built in a mobile which can be plugged in directly or through thin extendable wires. Hence, one does not need to remember carrying the charger now and also need not worry about accidents caused due to talking while charging.

A torch with an additional bulb

Md Alisher, Begusarai, Bihar

Having another bulb below the main bulb so that light is available near the feet of user and for people following the user. A simple and practical idea!

Hilly terrain cart

Vidya Ramesh, Bangalore, Karnataka

Three equidistant wheels on a single axle, attached to two similar sets in different planes, allowing flexibility in movement with respect to each other. A compassionate idea aimed at alleviating the suffering of mountain dwellers

Automatic blade-swinging ceiling fan for easy cleaning

Atheerth Chandran, Thiruvananthapuram, Kerala

When switched off, the blades loop downwards so that they can be cleaned and when switched on, they become horizontal.

Pen to check concentration

Rudra Prasad Goswami, Ranchi, Jharkhand

A pen with pressure sensors on the grip to indicate loss of concentration when the grip loosens. Your pen will now tell everyone if you are attentive or not!

Electronic purse with paired watch

Phamnya Konyak, Mon, Nagaland

Password-protected purse and an electronically-paired watch, which alerts if user gets away or someone steals the purse. Now, you cannot forget your purse and no one can run away with it!

Reduction of AC energy wastage through clamp meter

Aman, Mihiraan, Udai, Varun, Gurgaon, Haryana

Clamp meter, connected to an AC, monitors the current flow and indicates usage (range) through green, orange and red colour codes.

Reminding the owner if keys are forgotten in the vehicle

Chandramouly K Kandachar, Bangalore, Karnataka

A system in vehicle which intimates the driver through a phone call if the keys have been forgotten in the vehicle; prevents cases of theft.

Keeping students fresh while reading

Mahirah Akhter and Morifat Wani, Kupwara, Jammu & Kashmir

An ink or a paper (for books) which emits certain radiations and keeps the reader fresh and fatigue-free

Oxygen/carbon dioxide-level indicators in car

S R Valava, Kalpakam, Tamil Nadu, Pratyush Kumar Sahoo and Bikash Kumar Mallick, Khurda, Odisha

System to detect levels of oxygen/carbon dioxide and opens windows when oxygen level drops or carbon dioxide level rises, thereby preventing accidental deaths of children or pets locked inside the car.

Step-lock system in bus

R Santhosh, J Rajasekar, A Nivashini, K Rathna, Thiruvavur Tamil Nadu

Mechanism which would not allow the bus to move if people are standing on its stairs, thereby preventing accidents.

Wheel chair convertible to crutches

S Ramakishore, Sanjay Srinivas, Tamil Selvan, Chennai, Tamil Nadu

The idea is to have a modified wheelchair that can be folded and converted into a crutch so that it is easy to take stairs as well for the user.

Low-cost Braille printer

Y Santosh Singh, Khushwant Rai, Jalandhar, Punjab

A dot-matrix printer modified at a low cost to work as a Braille printer

New design of serving tray

Alok Singh, Ghazipur, Uttar Pradesh

Serving tray with a release mechanism to put cup/glass on the table along with a coaster without touching

Adjustable electricity extension board

Tenith Adithyaa, Virudhunaga, Tamil Nadu

Electricity extension board without plug points so that one can put any type of electric plugs wherever space is available.

Bulbs/cfl remover/connector

Gautham Praveen A, Tirunelveli, Tamil Nadu and Shweta Sharma, Jalandhar, Punjab

Hand-held rod with a clutch at the grip and a clasp at the further end to hold the bulb, making it easy for anyone to change the bulb without needing a chair or a ladder for it

Device to cool down anger

Shweta Sharma, Jalandhar, Punjab

A head-worn device that cools down our nerves within a quick time after wearing

IGNITE 2012

Spray-on, stay-on gloves and socks

Aditya Joshi, Pune, Maharashtra

The idea is based on a fast drying, resistant, non-abrasive, water-proof liquid formula, which can be filled in spray can. When socks or gloves are required, liquid can be sprayed and left to dry. This can be peeled off later when not required.

System to prevent people without license to drive a vehicle

Ravi Ranjan, Aditya Kumar, Varsha Kumari and Shiv Ranjan Kumar, Patna, Bihar, Durgesh Kumar, Begusarai, Bihar, Jyoti Dhillon, Rewari, Haryana, G Krishna Kumar, Thiruvur, Tamil Nadu

A slot should be provided in vehicles where the driver/rider may insert his/her driving license. The system would not allow him/her to drive if the license is not present, is invalid or has expired.

Headphones with sensors to detect external sounds

Lakshya Kaura, Naman Jain, Manav Mitra, Utkarsh Hora, Amrit Dang, New Delhi

These are headphones which pick up any external sounds like horn, alarms, etc. so that a person using them gets alert and is not totally oblivious to his/her surroundings.

Door bell with user code

Rajashree Choudhury, Jamshedpur, Jharkhand

It is difficult to identify the visitor as the door bell gives only one sound. A numeric pad may be provided where friends and family members are given a code. When the person presses the digits of the code (eg 1-2-3), the bell (through ring or any other means) will identify the visitor.

Preventing mobile usage while driving

Rajashree Choudhury, Jamshedpur, Jharkhand

A device with a place for inserting a mobile can be fixed on the car dashboard or handle of a two-wheeler. The vehicle moves forward only if the mobile is inserted into this device. In other words, the driver can't talk on the phone while driving.

Wind-operated ceiling fan

Md Usman Hanif Patel, Jalgaon, Maharashtra

A fan on the roof, directly attached to the ceiling fan through gears and shafts

Handpump for flood-affected regions

Kripesh Swain and Kumar Biswajeet, Bhubaneswar, Odisha

Generally, in flood prone areas, wells and hand pumps become unusable as muddy water gushes in. Kripesh and Biswajeet suggested a hand pump whose upper portion may rise with increase in the level of flood water, thus ensuring that it remains usable.

Movable road dividers

S Charisma, Hyderabad, Andhra Pradesh and Siddhartha Pal, Dehradun, Uttarakhand

All of us may have observed that vehicular traffic load on either side of the divider at different times during the day (specially during peak hours) varies. They suggested having movable road dividers that can be shifted to the left or right, depending upon the incoming traffic from a particular side, thereby easing congestion on roads.

Artificial assistance for blind people

B Survesh, Chennai, Tamil Nadu

Sunglasses with inbuilt camera to capture images of people and places and tagging them through voice commands and storing everything in an in-built database. The same is retrieved when a person is face-to-face by image comparison, giving a sound in the headphones.

Dual-purpose helmet

G Jeevan Siddharth, Vellore, Tamil Nadu

A helmet with a cushion support on the top for labourers at construction sites

Device to monitor mental stress

Ankita Arora, Jalandhar, Punjab and Parmar Himanshu Jiteshbhai, Ahmedabad, Gujarat

Device to monitor mental stress in students and others

Charging mobile from mobile

Ravi Duhan, Sanjay Raghav, Manoj Kumar

Sometimes, our mobile's battery gets discharged when we need to make an urgent call. In such a situation, it may be difficult to immediately get a charger or locate an electricity point for charging. But we could always find someone with a mobile phone. Ravi, Sanjay and Manoj suggested a handy device, using which a mobile can directly be charged from another mobile.

Retractable toilet pot with cleaning system

Shweta Verma, Jhansi, Uttar Pradesh

With increasing living space constraints, mechanisms are being evolved to optimally utilise whatever space is available, including washrooms. Shweta suggested a mechanism wherein the toilet pot can be enclosed in a closet like space and taken out whenever needed; with all the cleaning being undertaken inside automatically.

Modified painting brush

Ektapreet Kaur, Jalandhar, Punjab

For painting, brushes of different sizes are needed. Ektapreet's brush would have a slider that will move to cover the bristles, thereby limiting their movement. The brush has alphabets in different sizes on it. When the slider moves over the brush, these alphabets are visible through an open slit, thus indicating the size selected.

Multipurpose tent

Rishabh Gupta, Jammu, Jammu & Kashmir

Keeping minimal gear is important while camping. Accordingly, Rishabh proposes a multipurpose tent that can also turn into a raft. The tent has embedded solar panels to keep it warmly lit at night.

Rickshaw with foldable stairs

Mansi Priya, Ranchi, Jharkhand

The pedals are placed just below the passenger's seat and connected to the rear wheels. The rickshaw puller retains control over the brakes so that safety is not compromised. A simple lever is attached to make this system optional. So, when the pedals are not in use, they work as a comfortable leg rest.

Charging mobile while talking

Gautam Kumar, Patna, Bihar

A device to charge mobile while talking on the phone

Machine to suggest what to eat and how to cook It

Sharvay Harish Tiwari, Pune, Maharashtra

In his machine, you simply select a particular vegetable and the monitor displays a list of different ways in which it can be cooked, along with the ingredients required and their quantity.

Device to relocate clouds

Shweta Sharma, Jalandhar, Punjab

A device that could help relocate clouds

Glove with in-built mobile phone

Rohan Jolly, Delhi, New Delhi

In the icy region, the mobile sometimes get covered with snow and water entered inside, damaging it. Rohan thought of solving these problems by fixing the phone within the gloves, so that one can talk comfortably while remaining warm.

Shirt that wakes you up

Jatin Kumar Bhoi, Sundargarh, Odisha

A special shirt with a mechanism for ensuring that the person wearing it remains awake. We can also have buttons that can tell time.

Portable shifter and lifter

Rishab Gupta, Jammu, Jammu & Kashmir

A portable shifter to easily move heavy things. With this device, heavy items like furniture and refrigerators can be comfortably shifted by attaching a set of wheels to slide them from point to point.

Modified cycle rickshaw

Arnab Chakraborty, Kolkata

A cycle rickshaw with extra pedals for passengers who may wish to help by co-pedaling the rickshaw.

IGNITE 2011

Manual bedsheet squeezer

Dhaval, Udupi, Karnataka

A simple machine, which has one fixed arm and another one with a handle. The bed sheet or any such cloth is attached to the machine, and as the handle is rotated, the water gets squeezed out of the bed sheet.

Device to assist people with low vision

Jyoti Ranjan Sahu, Bhubaneswar, Odisha

His system makes use of a zoom camera and an LCD. The camera zooms in distant images, which get displayed on the LCD present in front of the eyes. This camera and LCD arrangement is attached to a helmet worn by the person.

Rice grain-separating/cleaning machine

Sajid Ansari, Ranchi, Jharkhand

This automatic electric machine separates broken rice grains and other physical impurities from unbroken rice grains.

Poster writer pen with adjustable stroke tip

Rimjhim Baruah, Jorhat, Assam

A poster-writing pen, using which one can easily write in different thick and thin strokes between a certain range (mm).

Modified walker with adjustable legs

Shalini Kumari, Patna, Bihar

Shalini came up with the idea of the modified walker with adjustable legs. She has also thought of including a folding seat so that the user can rest for a while when required and fitted a horn and a light to it as well.

Easy car cover

S R Poobesh Gowtham, Krishnagiri, Tamil Nadu

A simple idea of using covers rolled inside a rectangular frame. The frame is simply put on top of the car and pulled down when needed. It is held at position by gear locks. Open zips are used to join the ends of the cover as a single piece. After unzipping, gear locks are released, which makes the covers roll back into the frame.

Foldable water bottle and hoe-cum-spade

Ishaq Ahmad Wani and Refaz Ahmad Wani, Anantanag, Jammu & Kashmir

They have thought about a foldable water bottle where the size of the bottle can be reduced by folding-in as per the quantity of water remaining in the bottle. They have also developed a spade, the scoop of which can be rotated at the hinge to be converted into a hoe.

Innovative medicine packing

Shweta Sharma and Jaskiran Goraya, Jalandhar, Punjab

Change of colour in medicine packing to indicate expiry by putting a layer of liquid that disintegrates the covering membrane and soils the tablet after expiry time

Medicine box with reminder facility, taps with different timer settings

Mohit Singh Sidhi, Madhya Pradesh

A timer and an alarm on the medicine box which would alert him of the time to take his medicines.

Shoes with device to calculate time spent in physical activity and regulate TV-viewing time accordingly

Chhavi, Jalandhar, Punjab

Idea of making shoes communicate with the TV in such a way that it regulates and monitors TV watching time to match the amount of time that has been spent outside walking or playing.

Stapler that indicates pin are finishing

Ankita Nagarkar, Pune, Maharashtra

It may help in indicating that the pins are coming to an end. It saves time and is easy to use at no extra cost.

Healthy air machine

G Brahadees, Kalpakkam, Tamil Nadu

A portable machine which can be carried around in the house. This is an energy-efficient, cost-effective multipurpose machine which can be used for all the air-related functions like cooling, heating and purification, and has air curtain and spot-cooling effect which saves energy. Additionally, it can also used for air blowing, winnowing and vacuum cleaning for domestic, commercial, industrial and agricultural purposes

System to inform computer vision syndrome

Vignesh R, Chennai, Tamil Nadu

A system to detect computer vision syndrome which can detect the number of eye blinks per minute. It gives an alert to consult a doctor, if the number of blinks per minute gets reduced below a medically accepted limit.

Foldable and portable multipurpose device that can be used as chair, hammock, table, stairs, etc.

Pankit B Gami and Ekta Patel, Tapi, Gujarat

A multipurpose device which can be used in a number of ways like table, chair, stairs, hammock, rocking chair, relaxing chair, etc. This device is foldable and portable. You can even attach your stroller to it and carry both along wherever you go.

Use of helmet as an ignition switch to start two-wheelers

SM Arthi, Lailaa andVinotha, Thiruvar, Tamil Nadu

It effectively means that until the rider has worn the helmet, the vehicle would not start.

Strollers with foldable luggage carrier and several other ideas

Himanshu Verma, GB Nagar, Uttar Pradesh

Stroller can be modified so that other luggage may also be loaded. It would first of all reduce the number of articles to be taken care of and secondly, will make it easier to move the luggage.

Pipe-cleaning device

Bhanwar Malviya, Sirohi, Rajasthan

A small robot-like device with brushes and water outlet which could negotiate the turns and help clean blockages. He also thought of putting a mini drill device at the front, in case there were any stones or concrete blocking the pipes.

Bhama auto-diagnosis machine

Akshay Shivdas, Ghaziabad, Uttar Pradesh

Machine works like an ATM. The person has to stand in front of it and it asks you certain questions, as a doctor would ask during a physical consultation and then runs the required tests. This way it can diagnose the problem the patient is suffering from and prescribe medication accordingly.

Anti-molestation device for women, to be worn on wrist

Manu Chopra, Delhi

This is a watch-like device, capable of monitoring pulse rate and nerve impulse. Any significant increase in both the parameters (due to an emergency, especially when someone is trying to trouble) will activate electricity in the upper portion of the device. When the person trying to molest will catch hold of the wrist, he would get a shock that would give sufficient time to the girl to run away.

System to prevent drunk persons from driving

Satyam Agarwal, Jhansi, Priya Rawat, Dehradun, R Lakshmi, Kalpakkam and Arpna verma, Jalau, Uttar Pradesh

System to ascertain alcohol level of the driver through palm contacts on the steering/handle grip. Sensing that the driver has consumed alcohol, the onboard system is going to ask the driver some questions. If the driver is not able to answer the questions correctly, then the system will prompt for the password. If still the driver does not manage to get it correct, the system will lock the ignition. Another idea to achieve this is to use an on-board breath analyser to find out alcohol content and accordingly jam the ignition, if the detected range is beyond a certain limit.

Jacket that senses body temperature, blood pressure and alerts

Sheikh Sipai Farhinbanu Makbul Ahmad, Ahmedabad, Gujarat and Amlan Anupam, Bhubaneswar, Odisha

A jacket that could monitor some basic physiological processes like temperature, blood pressure, heart beat, etc. and store all the parameters in a digital device, like a mobile. This device then can be programmed to send an alert signal to a doctor/hospital if there is a marked deviation in the parametric readings from the normal.

IGNITE 2010

Mechanical porter

Masha Nazeem, Namakkal, Tamil Nadu

It is a jack-like device which can help people, especially women, old and children, to lift and move heavy objects from one place to other. This can be hand- or foot-operated.

Multiple physiotherapy devices

Ashok Aasrani, Jaipur, Rajasthan

He has designed many simple and low-cost exercising devices that help in rehabilitation after accidents or for people with limb disorders

Waste water management in urban areas

Parth Vaidya, Indore, Madhya Pradesh

Developed a system to process waste water, both domestic and industrial, so that it can be used for different purposes

Composite material from waste plastic

Hetal Vaishnav, Rajkot, Gujarat

She has processed plastic to obtain composite material which can be used to make different things like moulded furniture

Reading assistant for the blind/people with low vision

Mayank Walia, Jalandhar, Punjab

A gadget that uses sensors on the fingers that scan text and Braille and convert it into audio signals for the blind/visually-challenged .

Peel grove knife for pineapple

Vishan Popat, Vadodara, Gujarat

A knife that could peel off the tough skin and then groove out the 'eyes' of a pineapple

Noiseless horn

Manibhushan Kumar, Dhanbad, Jharkhand

Each vehicle to have signal (may be IR) emitters and sensors. When horn is pressed by the driver in the following vehicle, signals are transmitted, which are picked up by the car in front and a beep is there in the dashboard along with a light signal.

Talking wall-mounted calendar with reminder facility

Shruti Tyagi, Jalandhar, Punjab

Electronic calendar which has an in-built organiser and reminder facility so that one doesn't miss any event or an engagement

Pen that can recharge batteries while writing

Rahul K Singh, Ranchi, Jharkhand

The pressure on the tip of the pen while writing is used to charge a small battery

Vibrator-based overtake alarm, light-sensitive TV remote, transport vehicle with rotatory luggage carrier

Aditya Parashar, Hoshangabad, Madhya Pradesh

A microphone in the side view mirror to identify horn frequencies. When door window glass is closed and music is playing, it is difficult to hear the horn. The microphone will get activated when the glass is closed, it will send signals to a vibratory pad on the steering and alert the driver.

Crutch with spring-shock absorber and audio/light alarm

Archana Konwar, Dhemaj, Assam

The idea is to have a crutch with spring shock absorber for the comfort of the user and also an audio/light alarm to alert others.

Vacuum cleaner in shoe

T Chris Ananth, Thirunelveli, Tamil Nadu

Small sucking device and dust bag may be fitted inside the shoe so that when a person walks his shoe can collect dust. Similar device may be connected to a cycle so that when one cycles, it can collect dust.

The Cycle-o-Cleaner

Riya Kothari, Nimran Kang, Kaamya Sharma, Mehr S. Mehta, Delhi

A cycle with two cylindrical brooms attached to the back wheel. This rotates due to the gears that connect the rods. The brushes are closed together so when they rotate the dust slips through and is pushed to the sides of the road, making the walk/drive way clean. This cycle may include an extra dust

Tricycle for visually-challenged

Rashmi Maruvada, Kolkata, West Bengal

Tricycle with pre-programmed routes for the visually-impaired

Euphorbia contifolia as termite/tic repelling

Varsha Singh, Jalandhar, Punjab

Use of the mentioned plant to repel termites and ticks .

System to prevent people from using mobile phone while driving

Divyam Gupta, Bulandshaher, Uttar Pradesh

In order to prevent use of mobile phone while driving, he has suggested to place touch sensors on gear handle and steering. This means that both the hands need to be either on the steering or on steering or gear handle. When one will use mobile phone, he will drive using one hand.

Process of reeling cut or pierced muga cocoons to obtain continuous filament

Kaushik Boruah , Golaghat, Assam

This process helps to obtain continuous filaments from the cut or pierced muga cocoons, which otherwise get wasted.

IGNITE 2009

Automatic food-making machine

Abhishek Bhagat, Bhagalpur, Bihar

Kitchen King has 12 boxes containing different ingredients, with a display screen to select options to cook different items. The required quantity of each ingredient will be fed into the machine in the sequence one has pre-planned recipes to cook the desired dish.

Pressure detector for water pipelines

Himala Joshi, Nainital, Uttarakhand

She has designed a pressure detector fitted in the pipeline. It rings an alarm immediately on sensing the flow of water, thus alerting people.

Flameless seal maker

Masha Nazeem, Namakkal, Tamil Nadu

The traditional way of covers or boxes is using lac, heated at a very high temperature. It is a hazardous job. It has been used in India since the Mughal Era. The flameless seal maker eliminates the use of fire to melt lac and also ensures uniform treatment or seal imprint. Just fill the device with lac, plug it into power supply and one can then control the flow of the lac with a piston. There is little chance of getting burns this way.

Lavatories with auto-washing pipe

Sasmita Nayak, Kendujhar, Odisha

A toilet fitting connected to a door by a spring mechanism, splashes water on the floor and in the toilette when a person opens the door. This way, toilets in railway bogies can be kept clean with minimal water wastage.

Breathing sensor apparatus to assist physically-challenged

Susant Patnaik, Bhubaneswar, Odisha

This system consists of a circuit, which uses the changes in breathing patterns to select several options such as food, water, etc. It thus enables paralyzed/physically-challenged people articulate their wish and be self-reliant in routine activities. The technology has a range of applications.

Fire hose supporter

Abhishek Srikanth, East Core Campus, Singapore

The jet of water that shoots out of a hose is very strong and the reaction force on the fire-fighter is difficult for him to handle. Hence, a foldable stand could be developed which is connected to the fire-hose by a spring mechanism. The angle of the hose is also flexible. This enables less strain and ensures a steady spraying of water jet at desired targets.

Preventing clothes from getting drenched in rain

Piyush Agarwal, Hazaribagh, Jharkhand

When it rains, a motor may get triggered by salt that absorbs atmospheric moisture/sensor. It would pull the rope inside on which clothes are hung. This may save housewives, an additional chore!

Body heat and pulse to charge cell phone

Sarojini Mahajan, New Delhi

A gadget can be developed to utilise the body heat or the stimulus of pulse to charge a cell phone. Interestingly, this idea was picked up by a Stanford University faculty for exploring its feasibility for charging batteries of e-book.

Bus with approach-alert system

Pallavi Sharma, Jalandhar, Punjab

An idea about a high-tech school bus which can give alert signal as it approaches the bus stop. No one would miss any bus this way!

Integrating gait with security systems in mobiles

Anurag Rathore, Jalandhar, Punjab

The idea is to intergrate gait of person with mobile. As walking style differ from person to person, the software will be able to identify the signals based on the body movements while walking. If the mobile will sense a different movement once activated, it will lock itself and send a message about its location to a predefined number.

Triangular wheels

Yatharth Saxena, Pantnagar, Uttarakhand

This is an arrangement of three wheels on both the side of an axle. This may be used in carrying luggage strollers on the stairs.

Rain water-harvesting umbrella with filter

Saihiel Bakshi, Delhi

Integrating funnels in an umbrella, Saihiel has made a model which can harvest rain water. The water from the funnels is led into a filter and then collected in a bottle. This can then be used later .

Travel bags with folding seats

Nisha Chaube, Noida, Uttar Pradesh

Considering the problem that commuters have to face while waiting for buses/trains at stations, Nisha has suggested incorporating light-weight folding seats in traveling bags so that the same can be used when needed.

Ambulances/fire brigades with integrated GPS

Meenakshi Padhi, Angul, Odisha

In order to stay clear of traffic during emergencies, Meenakshi suggests that ambulances/fire brigades, fitted with GPS, are integrated with traffic system so that path is cleared for them by appropriate light witching. For instance, as the ambulance comes near a traffic junction, lights will turn green for it to pass.

Clock with a water alarm!

Airam Khatoon, West Champaner

This is a simple idea about a clock that sprays water after a preset time.

System to provide a mirror with extended view while overtaking a vehicle

Ujjwal Jain, Bangalore, Karnataka

This device mainly shifts the area of view along the axis of the mirror. This is done in order to extend the view behind the vehicle and also to enable the driver view what is besides him.

Putting to use waste water from RO systems

Ramya Ahuja, New Delhi

It is suggested to use the waste water from RO system for different domestic purposes.

Apparatus to increase the life of mosquito coils

Prakhar Parashar, Hoshangabad, Uttar Pradesh

This is a tested apparatus that increases the life of a mosquito coil considerably. Without apparatus, five inches of the coil burns in one hour, while with apparatus only four inches burn in the same time. Thus, 20 per cent extra life helps in controlling mosquitoes for that much time extra.

IGNITE 2008

Double-door dustbin

Amnaya Sheel Khosla, Mrudang Mathur, Shreyas Kadaba, Abhiveer Arjun, New Delhi

The upper portion of the dustbin is like normal dustbin where we put waste. The lower part has a drawbridge-like system wherein a side can be lowered, enabling a person to sweep dust directly into the dustbin

Rain water-harvesting umbrella

Ojasvi Goel, New Delhi

It is an umbrella that protects from rain and at the same time collects water falling on the umbrella and makes it available for drinking by channeling it in a bottle.

Automatic garbage collection

Atulya Gupta , New Delhi

The empty wrappers of eatables should have a thin layer of magnetic material. Correspondingly, the public dustbins should also have a similar magnetic material. These wrappers, when thrown near the dustbins or even randomly flying in the air, will get attracted to the bin.

Portable and safe cooker

Venkatesh Jindal, Viraj Nanda, Ashrant Kohli, New Delhi

It is a small, portable wooden cooker that weighs approximately a kilogram. It is aluminium foil covered and can be put over a flame for cooking.

Sensor-based automobiles to prevent accidents

Susant Pattnaik, Bhubaneswar, Odisha

Sensor-based system on automobiles to detect vehicles, obstacles and potholes.

IPL Business Twenty-20

Siddharth Somani, Ahmedabad, Gujarat

IPL Business Twenty-20 is a board game for children of 6+ years of age. This game can be played by two to four players. This game teaches a child to a) invest to get higher returns (b) Strategise to save the cost and help run profitable businesses. The game is designed using the concept of PIL Twenty-20 cricket matches.

Single-push pizza cutter, side-window wipers for cars and many other ideas

Vishan Deepak Popat, Vadodara, Gujarat

He has come up with a pizza cutter that can cut a pizza upto 20 inch in diameter, into eight equal pieces. He also has a lot of other ideas. He has conceived an idea of side-window wipers for cars to enable people sitting on the sides see clearly.

Automated traffic signal system

Girish S and Ashwin Nagarajan, Chennai, Tamil Nadu

The normal signal has been modified to auto-set the timing interval based on the traffic volume .The principle behind this is to make use of the increased weights due to additional traffic, triggering a sensor. In schematic model, weights (instead of vehicles) have been used to trigger the switches (instead of sensor in the normal signal).

LPG exhausting indicator

Ullas Keshav, Poornesh A S, Amogh M Hooli, Vignesh D Nernekar, Akshay Tulasigeri

An electronic device that informs the user that the LPG in the gas cylinder is going to exhaust. When the weight of the cyclinder decreases beyond a certain fixed weight, the signal gets activated.

Automatic garbage disposal

Riya Misra and Seerat K Dhillon, New Delhi

A dustbin/garbage can that can take garbage till a particular weight, once the weight exceeds, the bin tilts and throws the garbage into the garbage bin outside.

Accident preventer

Abhin Phillip, Palakkad, Kerala

Use of reflecting mirrors at turns to enable the vehicle approaching the turn to see vehicles coming from the other sides

Load-controlling system

Anubhav Haldiya, Jaipur, Rajasthan

This system using sensors and weight measuring system, checks overloaded vehicles and does not allow them to cross the check point.

Electricity-saving street lights

Yashvir Surana and Dev Agnihotri, Jaipur, Rajasthan

The concept used here is the scattering of light by a convex mirror. The plan is to put two-density lights and on the opposite, putting four convex mirrors as reflectors.

National Innovation Foundation-India

Vision

To make India innovative and to add value to India's outstanding traditional knowledge base.

Mission

To help India become an inventive and creative society and a global leader in sustainable technologies without social and economic handicaps affecting evolution and diffusion of green grassroots innovations.

Building upon the Honey Bee Network (HBN) Philosophy, the National Innovation Foundation- India (NIF), started functioning in March 2000 as India's national initiative to strengthen the grassroots technological innovations and outstanding traditional knowledge. Its mission is to help India become a creative and knowledge based society by expanding policy and institutional space for grassroots technological innovators. While recognizing, respecting and rewarding grassroots technological innovators and traditional knowledge experts, NIF is committed to make India innovative by scouting, documenting, adding value, protecting intellectual property rights of the innovators/knowledge providers, diffusing their innovations on a commercial as well as non-commercial basis generating incentives for them and others involved in the value chain.

Activities

Scouting, Documentation and Database Management (SDDM)

Value Addition Research and Development (VARD)

Business Development and Micro Venture Innovation Fund (BD & MVIF)

Intellectual Property Management (IPM)

Dissemination and Social Diffusion (DSD)

With major contribution from HBN Volunteers, NIF has pooled a database of over 2, 85,000 technological ideas, innovations and traditional knowledge practices (not all unique, not all distinct) from over 595 districts of all the states and Union Territories of the country. NIF has till date recognised 920 grassroots innovators, outstanding traditional knowledge holders, communities and school students at the national level in its various National Biennial Grassroots Innovation Award Functions and annual Dr. APJ Abdul Kalam IGNITE Award Functions. In collaboration with various R&D and academic institutions, agricultural and veterinary universities, and other institutions, NIF has helped getting several hundred grassroots technologies validated and/or value added. It has also set up an augmented Fabrication Laboratory (Fab Lab) with the help of Massachusetts Institute of Technology (MIT), USA for product development and strengthening in-house research. NIF has filed 925 patents, including eight filed in the USA and 28 Patent Cooperation Treaty (PCT) applications, on behalf of the innovators and outstanding traditional knowledge holders. Of these, 48 patents have been granted in India and 5 in the USA. It has also filed applications for 61 plant varieties developed by farmers at the Protection of Plant Varieties & Farmer's Rights Authority (PPV&FRA). Of these, 7 have been successfully registered. 21 Design registrations have also been filed by NIF.

Micro Venture Innovation Fund (MVIF) with the support from Small Industries Development Bank of India (SIDBI) has provided risk capital to 211 projects, all of which are at different stages of incubation. NIF has received over 1200 product inquiries from 108 countries for various technologies. It has also succeeded in commercializing products across countries in six continents, apart from being successful in materializing over hundred cases of technology licensing

NIF has acquired the rights of eighty one technologies from the innovators under Grassroots Technological Innovation Acquisition Fund (GTIAF) for generating employment for the rural youth, self-help groups etc. in rural areas. NIF made these technologies available to small entrepreneurs so that large number of such entrepreneurs can take up the products to localised market. This will promote decentralized production since cost of supply chain market will be huge. NIF has also set up forty two community workshops in different rural areas of the country at the premises of experienced innovators so that other grassroots innovators of the region can have access to fabrication facilities and also learn from them. The community workshops are likely to facilitate the conversion of ideas/dreams of new innovators into reality and these workshops were set up in nineteen states.

NIF incubation and Entrepreneurship Council (NIF-ientreC), a Technology Business Incubator (TBI), set up with financial support from the Department of Science and Technology (DST) nurtures grassroots innovators and technology youth in a 'sanctuary of innovation' distributed all over the country through ex situ and in situ incubation by hand holding, mentoring, linking them with designers, fabricators, contract manufacturers etc. NIF-ientreC has successfully incorporated eight companies of grassroots innovators and facilitated registration of twelve companies under the Start-up India program.

In addition to the above, the INSPIRE Awards- MANAK (Million Minds Augmenting National Aspiration and Knowledge) is being revamped and executed by Department of Science & Technology and National Innovation Foundation- India to align it with the action plan for "Start –up India" initiative launched by the Hon'ble Prime Minister of India. The scheme aims to help build a critical human resource pool for strengthening, expand science and technology system and increase the research & development base on the same by inviting students from all government and private schools throughout the country and enabling them to send their original & creative technological ideas/innovations on the same.

NIF has proved that Indian innovators can match anyone in the world when it comes to solving problems creatively, where they perform better than rest is in generating greater sustainable alternatives by using local resources frugally. Those who see poor only as the consumer of cheap goods, miss the knowledge richness at grassroots level. The Grassroots to Global (G2G) model that NIF is propagating is all set to change the way the world looks at the creativity and innovations at grassroots.



Honey Bee Network



the philosophy

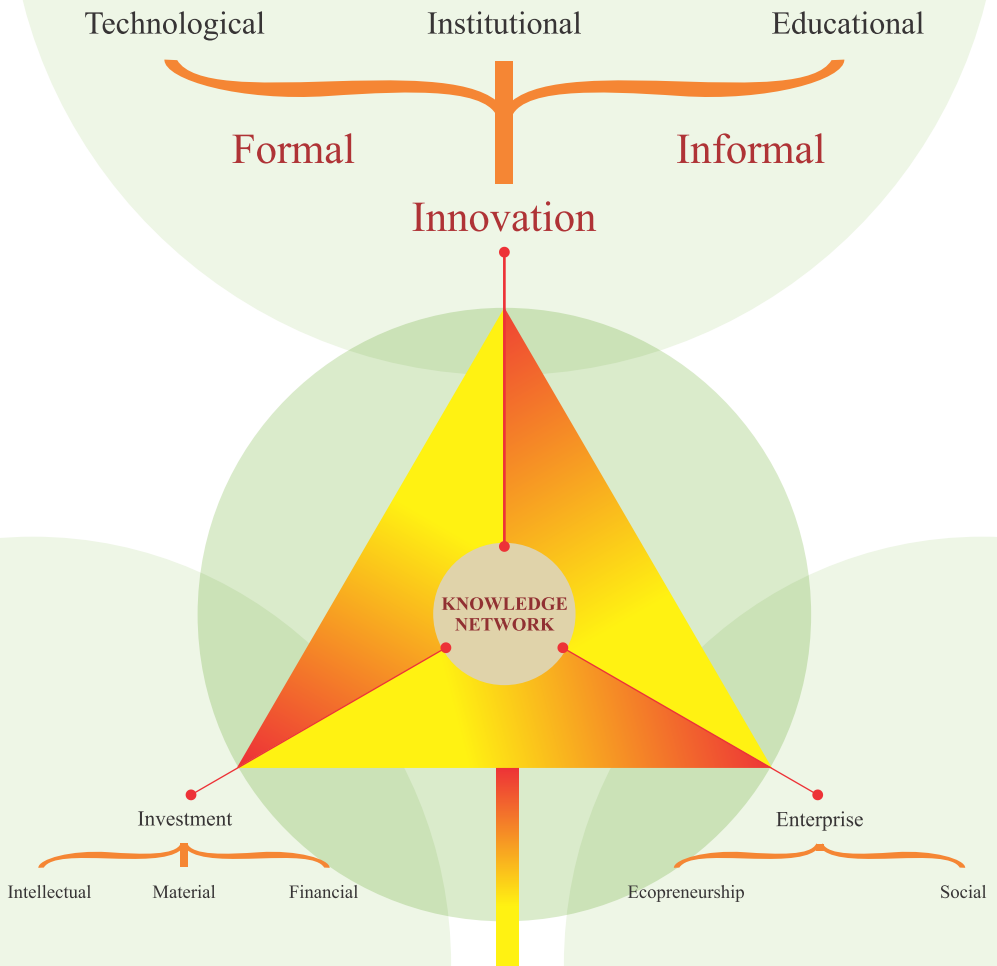
Honey Bee is a metaphor indicating ethical as well as professional values. Cross-cultural fertilization of ideas, innovations and initiatives to build a knowledge network is one of the fundamental tenets of the Honey Bee Network. Collaborative efforts of Honey Bee Network members during the last 14 years in carrying out the documentation of people's knowledge systems have been pursued on the basis of following principles:

- Whatever is learnt from people must be shared with them in their own language so that people to people connections can be made and they can validate our understanding of their creativity.
- All practices/innovations must be identified by the names and addresses of the individuals/communities in order to acknowledge their contribution and pursue protection of IPRs of grassroots innovators.
- Whatever gains are made by those who document or add value to the local knowledge, innovations or practices should be shared with the providers of knowledge and others who have contributed to value addition in a fair and equitable manner.



Honey Bee

THE GOLDEN TRIANGLE



Contact us at info@nifindia.org if you are interested in product development, mentoring, investing and/or commercialising any idea.



National Innovation Foundation-India

Grambharti, Amrapur, Gandhinagar-Mahudi Road,
Gandhinagar, Gujarat - 382650

Tel: 02764261131/ 32/ 38/ 39, Fax: +91 114385 1803

Email : ignite@nifindia.org, Web : www.nif.org.in/ignite