News Letter

December 2017 To May 2018

Guru Gobind Singh Foundation's

Guru Gobind Singh College of Engineering and Research Centre, Nashik

(Approved by AICTE, Govt. of Maharashtra & DTE Mumbai, Affiliated to Savitribai Phule Pune University)

About news Letter

GGSF's Guru Gobind Singh college of Engineering and Research centre, Department Of Mechanical Engineering is proud to publish its News Letter December 2017-May 2018.

The objective of this Newsletter is to keep our students, Parents Faculty and Industry informed about the activities happening in the Department.

Highlights:31 Students got placed in various industries & 42 students participated in various activities.

Through this half yearly publication, we hope to engage our various stakeholders in building the network among themselves,We hope you enjoy it !

Inside

Editorial Board:

About Institute (GCOERC, Nashik)

From a small seed sown, 4 decades ago the institution has risen to a big tree, all through relentless efforts of its founders members, qualified faculties and students, who have left no stone unturned to bring laurels, trophies and citations in the field of education.

With humble beginnings in 1978, Guru Gobind Singh Foundation was formed by prominent and illustrious Sikh residents of Nasik, as worthy followers of the great saint soldier "Guru Gobind Singh". The foundation set upon itself the aim of imparting high quality education with culture activities, ethics and social commitment to students.

Guru Gobind Singh College of Engineering and Research Centre, Nashik is one of the best upcoming technical institutions under the Savitribai Phule Pune University, Pune offering four years degree courses in Civil, Computer, Mechanical and Electrical Engineering incepted by the foundation in the year 2013-14.

Vision:

An institute striving for excellence in providing transformative academic education and stimulating environment for research to enhance skills for developing intellectuals and to inculcate quality education with social and technical knowledge which will benefit the society and industrial challenges.

Mission:

- To be a technical educational Institute in transforming aspiring engineers through rigorous course work and technical skills.
- To benchmark with the best global standards of quality education.
- To enhance commitment of the faculty, staff and students by inculcating the spirit of inquiry, team work and professionalism.
- Establish a centre of excellence to enhance academia-industry partnership, work on collaborative projects, and develop new products, services and patents.
- To develop globally competent students by enhancing indigenous technologies and inculcate entrepreneurship in them.

Salient features of GCOERC:

- Strong team of highly qualified, experienced and committed Teaching Faculty
- Latest Modern Equipment in laboratories in every department
- Dedicated 100 Mbps leased line, Wi-Fi enabled internet campus
- Elaborate monitoring of campus through strategically installed CCTV cameras for full-proof security
- Well stocked main and e-libraries with more than 5500+ books, Access to 900+ On-line journals and 33 printed journals
- Purposefully designed 400+ capacity Auditorium
- Book-bank scheme, open access to e-books and e-journals and digital library
- Excellent Bus, Cafeteria and Sports facilities for Students as well as Staff, special tutors for Yoga and Spoken English throughout the semesters
- Pure and Safe RO-drinking water for students and staff all over the campus
- Cafeteria serves variety of Indian and fast-food
- Many Skill Development courses under PMKVY scheme.
- Joint Certification Courses from Bosch and Siemens under Institute Industry Partnership.

About Department of Mechanical Engineering:

Mechanical Engineering is a discipline of Engineering that applies the principles of science and materials science for analysis, design, manufacturing, and maintenance of mechanical systems. It is one of the oldest and broadest of the engineering disciplines. The application of mechanical engineering can be seen in the archives of various ancient and medieval societies. It is the branch of engineering that involves the design, production, and operation of machinery.

Vision:

Mechanical Engineering Program strives for excellence in value based Quality Technical Education and Research environment with Entrepreneurship and Sustainable development approach to satisfy industrial and social needs.

Mission:

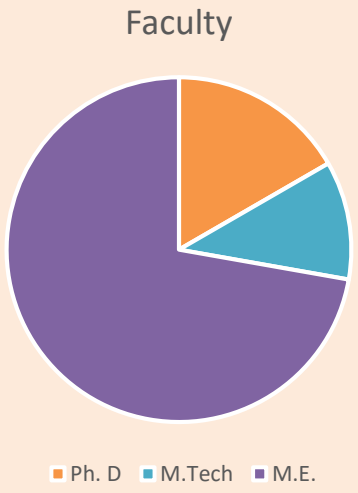
- To transform aspiring Mechanical engineers through course work and industrial exposure.
- To establish academia-industry partnership, work on various projects, and develop new products, services and patents.
- To develop quality mechanical engineering undergraduate to accept societal challenges.
- To enhance commitment of the professionalism among faculty, staff and students by inculcating team work.

Programme Educational Objectives:

- **PEO 1:** An ability to practice as skilled technocrats to cater the needs of Industries.
- **PEO 2:** An ability to pursue higher studies and to work in research and development, with innovative efforts for professional careers.
- **PEO 3:** An ability to express an attitude with responsible, professional and ethical manner to address social and technical challenges through lifelong learning.
- **PEO 4:** An ability to work as leaders that supports service, economic and sustainable development with high human and ethical values.

Faculty:

Sr.No	Name of faculty	Designation	Qualification
1	Dr. S. D. Kalpande	Ph. D	VP &Dean Academic
2	Dr. C. D. Mohod	Ph. D	Professor &head
3	Dr .P .S. Kalos	Ph. D	Professor
4	Milind S Patil	M.Tech	Assistant Professor
5	Sandip Patil	M.E.	Assistant Professor
6	Vijay B. Sarode	M.E.	Assistant Professor
7	Vishal Dhore	M.E.	Assistant Professor
8	Ketan V. Dhande	M.E.	Assistant Professor
9	Deepak D Patil	M.E.	Assistant Professor
10	Rohit Khandare	M.E.	Assistant Professor
11	Dipak C. Chavan	M.E.	Assistant Professor
12	Pritam Kudale	M.Tech	Assistant Professor
13	Harshal Tambat	M.E.	Assistant Professor
14	Vidyasagar Gavali	M.E.	Assistant Professor
15	Sachin Shinde	M.E.	Assistant Professor
16	Keshav Pagar	M.E.	Assistant Professor
17	Swapnil Kondo	M.E.	Assistant Professor
18	Vishwesh Kathe	M.E.	Assistant Professor



FDP/STTP/Workshop Organized:

Sr. No.	Faculty Name	Training/STTP /Workshops	Subject
1	Mr. V. B. Sarode	Research Methodology	Syllabus Implementation W/S on DOM
2	Mr. V. B. Sarode	Opportunities for Engineer in ITES sector	Mr. Pravin u arm & Ms. Rucha Deshmukh

FDP/STTP/Workshop Attended:

Sr. No.	Faculty Name	Training/STTP /Workshops	Subject
1	Mr. S. S. Patil	Research Methodology&Syllabus Setting W/S on CAM	Question Paper Setting WCM at YCMOU
2	Mr. S. S. Patil	Research Methodology	Question Paper Setting WCM at YCMOU

Faculty Publications

Sr. No.	Faculty Name	Papers in Conference/Journals	Title	Date
1	Dr. S. D. Kalpande	International Journal of Sustainable Development and World Ecology, Taylor and Francis, online Vol.25, No.04, 2018, pp.303-311.	A framework of enabler's relationship for implementation of green manufacturing in Indian context	Nov 17
2	Dr.S. D. Kalpande	International conference on Advances in system Thermal Systems, Materials and Design Engineering, VJTI Mumbai	Experimental measurement of erosive wear and development of prediction model using adoptive nero fuzzy inference	Feb-18

3	Mr. S. H. Kondo	International Journal of Engg & Science Inventione-ISSN: 2319 - 6734 p-ISSN:2319 6726	Automatic Brake Fluid Leakage Detection with Safety Bypass Braking System	Mar-18
4	Mr.R.S.K handare	International research journal of engineering and technology (IRJET) eISSN: 2395-0056 p- ISSN: 2395-0072	Enhance the capacity of outer tube machining cell	Mar-18
5	Mr.S. V. Shinde	International research journal of engineering and technology (IRJET) eISSN: 2395-0056 p- ISSN: 2395-0072	Autoloader for Welding Machine	May-18

Academics and Industry Visit

Sr.No	Industry Name	Objective	Class	Date and Venue
1	ST Workshop	To understand diff. types of automobile systems.	S.E.	28-03-2018 Mhasrul,
2	Nashik Engineering Cluster	To Understand metrological instruments and quality control techniques.	T.E.	05-04-2018 MIDC Ambad Nashik
3	Narang Colds Pvt. Ltd	To understand the refrigeration system	T.E.	19/9/18 MIDC Satpur
4	Dahanu Power Station	To Understand the working of thermal power station.	B.E.	31/03/2018 Dahanu

MESA Activities

Mechanical Engineering Department of Guru Gobind Singh College of Engineering & Research Centre, Nashik hosted an Event "Check-Mech 2k18" a State level Event between 21/02/2018 TO 22/02/2018.

Objectives:

1) To develop the event management skills of the students.
2) To develop the leadership qualities of the students.
3) To enhance the team work spirit among the students.
4) To inculcate marketing skills in the students.




Student Participation

Sr. No.	Student Name	College Name	Achievement	Position
1	Adesh S. Gholap	Karmaveer Adv. Baburao Ganpatrao Thakare COE Nashik	Box Cricket	2
2	Shekhar Deshmukh	National Level Technical Festival	Box Cricket	2
3	Shekhar Deshmukh	Instrubotics 2K18	Box Cricket	2
4	Shekhar Deshmukh	CHECK-MECH 2K18 (GCOERC, Nashik)	Box Cricket	2
5	Prathamesh Bhamare	Technobrain 2K18	Design IT	3

6	Rahul Kale	Instrubotics 2K18	Box Cricket	2
7	Sanket Jadhav	Sardar Patel College of Engg.	Civil-CAD	1
8	Sanket Jadhav	Matoshri Aasarabai Polytechnic, Eklahare, Nashik	MAP-FEST	1
9	Sanket Jadhav	Sir Visvesvaraya Institute of Tech., Nashik	CAD-WAR	2
10	Sanket Jadhav	CHECK-MECH 2K18 (GCOERC, Nashik)	AA- Creo-Ti	2
11	Sanket Jadhav	SIEM, Nashik (MECHSUMMIT 2K18	CAD-WAR	2
12	Sanket Jadhav	Karmaveer Adv. Baburao Ganpatrao Thakare COE Nashik	CAD	2
13	Sanket Jadhav	K K Wagh College of Engg. FORCE 2018	CAD-ENZA	2
14	Pratik Jagdale	Jawahar Education Society's Institute of Tech., Management & Research, Nashik	Robo-Race	3
15	Sank.et S. Jadhav	Matoshri Aasarabai Polytechnic	CAD-WAR	1
16	Rahul Kale	Matoshree Karandak 2018	Kabaddi	2
17	Durgesh S. Wagh	SIEM, Nashik (MECHSUMMIT 2K18	CAD-WAR	1
18	Durgesh S. Wagh	GGSP Nashik	Lathe War	3
19	Kalpesh B. Bhavsar	Karmaveer Adv. Baburao Ganpatrao Thakare COE Nashik	Quiz	1
20	Kalpesh B. Bhavsar	CHECK-MECH 2K18 (GCOERC, Nashik)	Quiz	Runner Up
21	Durgesh S. Wagh	K K Wagh College of Engg.	CAD-WAR	1
22	Akshay R. Patil	GGSP Nashik	Robo-Race	1
23	Durgesh S. Wagh	Sir Visvesvaraya Institute of Tech., Nashik	CAD-WAR	1
24	Kalpesh B. Bhavsar	SIEMNashik	Technical Quiz	1
25	Shreyas Bhalerao	EQUINOX 2018	Shutterbug	2
26	Shreyas Bhalerao	K K Wagh College of Engg.	Photography	2
27	Akshay P. Gagare	Bhujbal Knowledge City	Box Cricket	3
28	Akshay P. Gagare	SIEMNashik	Box Cricket	2
29	Gaurav V. Thakare	Matoshree Karandak 2018	kabaddi	2
30	Gaurav V. Thakare	SIEM, Nashik	Box Cricket	2
31	Pushpak Shewale	MVP Kshitij 2K18	Counter- Strike	1
32	Aniket Paramwal	SIEM, Nashik	Box Cricket	2
33	Durgesh S. Wagh	CHECK-MECH 2K18 (GCOERC, Nashik)	Robo Rush	2
34	Kalpesh B. Bhavsar	CHECK-MECH 2K18	Box Cricket	2
35	Kalpesh B. Bhavsar	SIEM, Nashik	Box Cricket	2
36	Shubham Dandgawhal	SIEM, Nashik	Box Cricket	2
37	Omkar S. Khaire	Gokhale Education Society's Nashik	Bridge Making	1
38	Shubham Dandgawhal	CHECK-MECH 2K18	Box Cricket	2
39	Mayur Aswale	JIT College Nashik	Project competition	1
40	Mayur Aswale	Sandip University	Paper present	2
41	Mayur Aswale	Karmaveer Adv. Baburao Ganpatrao Thakare COE	Paperanzaaq	1
42	Mayur Aswale	Karmaveer Adv. Baburao Ganpatrao Thakare College of Engg. Nashik	Paper Presentation	1

T&P Activities

Sr. No.	Name of Student	Name of Organisation	Location
1	Abhishek Lahare	Armstrong Machine Builders P. Ltd,Mo: -9175609687	Nasik
2	Rahul Parakh	Armstrong Machine Builders P. Ltd,Mo: -9175609687	Nasik
3	Vaishanvi Raijade	Armstrong Machine Builders P. Ltd,Mo: -9175609687	Nasik
4	Vinay Tambat	Armstrong Machine Builders P.Ltd,Mo: -9175609687	Nasik
5	Aniket Dongare	Rajindra lndustres,02532381317	Nasik
6	Raviranjan Mukesh	Prem Industries, 9820592064	Thane
7	Akash Rajaram Pawar	Prem Industries, 9820592064	Thane
8	Arshin Deshmukh	Shirode Cars P. Ltd, 0253 6669999	Nasik
9	Shubham Sanjay Gaikwad	Hiroden Cars P. Ltd, 0253 66610000	Nasik
10	Mayur Aswale	Shirode Cars P. Ltd, 0253 66610001	Nasik
11	Mahesh Padul	Shirode Cars P. Ltd, 0253 66610002	Nasik
12	Divya Das	Q Spider Software Testing Training Institute, 8087217555	Pune

13	Mohd. Gaus Shaikh	Q Spider Software Testing Training Institute, 8087217555	Pune
14	Mahesh Chavan	AAA Engineering, 092251 12921	Nasik
15	Aditya Tale	Dhumal Industries, 9130063384	Nasik
16	Aqib Khatib	Right Tight Fastners P. Ltd, 9766791331	Nasik
17	Pathan Juber	Right Tight Fastners P. Ltd, 9766791331	Nasik
18	Mr. Wasik Peerzada	Mahindra & Mahindra,0124-4782599 / 9765121321	Nasik
19	Mr. Hemant Pal	Reliable Autotech P. Ltd, 0253- 2385262	Pune
20	Mr. Shubham Chavan	Sahyadri Industries Ltd,2032415153	Pune
21	Mr. Kamlesh Patil	IBM Auto P. Ltd, 02532207209	Nasik
22	Mr. Ashok Chaudhari	Tushar Precicomp P. Ltd, 0253-	Nasik
23	Mr. Gufran Sayyed	Mahindra & Mahindra,0124-4782599 / 9765121321	Nasik
24	Mr. Suyash Shimpi	Mahindra & Mahindra,0124-4782599 / 9765121321	Nasik
25	Mr. Atul More	Flash Electronics P. Ltd, 02135-666000	Pune
26	Mr. Gaurav Veola	Shareen Auto P. Ltd, 0253 304 2026/27	Nasik
27	Mr. Sunny Khedkar	Bunt Tools P. Ltd 0253 2382026	Nasik
28	Mr.Darshan Raundal	CEAT LTD, 0253-6612331	Nasik
29	Mr. Pradeep Dabale	Entech Controls, 0253 2352773	Nasik
30	Mr. Vaibhav Kale	Lalit Hydraulics	Nasik
31	Mr. Vaibhav Jadhav	Finite Engg. Consultancy Services P. Ltd	Pune

Result of 2017-18 (Summer Examination)

SE Topper:

Sr. No.	Name of Student	%	Class
1	Shraddha Manoj Chopadekar	68.93	Dist.
2	Bhardwaj Aman Sarban	68.53	Dist.
3	Kulkarni Aditya Ramdas	68.27	Dist.
4	Sayyed Mohammedali Mukhtarali	67.33	Dist.
5	Bhirud Prafulla Mahesh	65.73	Dist.

TE Topper:

Rank	Name Of Student	Percentage	Class
1	Bhatiya Chirag Jaikishan	76.53	Dist
2	Sinakr Suraj Balkrishna	71.2	Dist
3	Jagtap Shubham Subhash	71.2	Dist
4	Gaikwad Aishwarya Anandrao	70.53	Dist
5	Borade Kajal Pandit	67.87	Dist

BE Topper:

Sr. No.	Name of Student	%	Class
1	Lahare Abhishek Sunil	78.8	Dist
2	Raijade Vaishnavi Balasaheb	78.67	Dist
3	Pathan Juber Iqbal	77.2	Dist
4	Sayyad Gufran Iqbal	77.07	Dist
5	Das Divya Mohan	76.93	Dist

SE Subject Topper:

Sr. No.	Name of Subject	Name of Student	Max. Marks
1	Manufacturing Process-I	Kulkarni Aditya Ramdas	69
2	Thermodynamics	Sayyed Mohammedali Mukhtarali	76
3	Material Science	Patil Akash Ajay	75
4	Strength of Material	Sayyed Mohammedali Mukhtarali	74
5	Engineering Mathematics-Iii	Kotwal Nikhil Sanjay	73

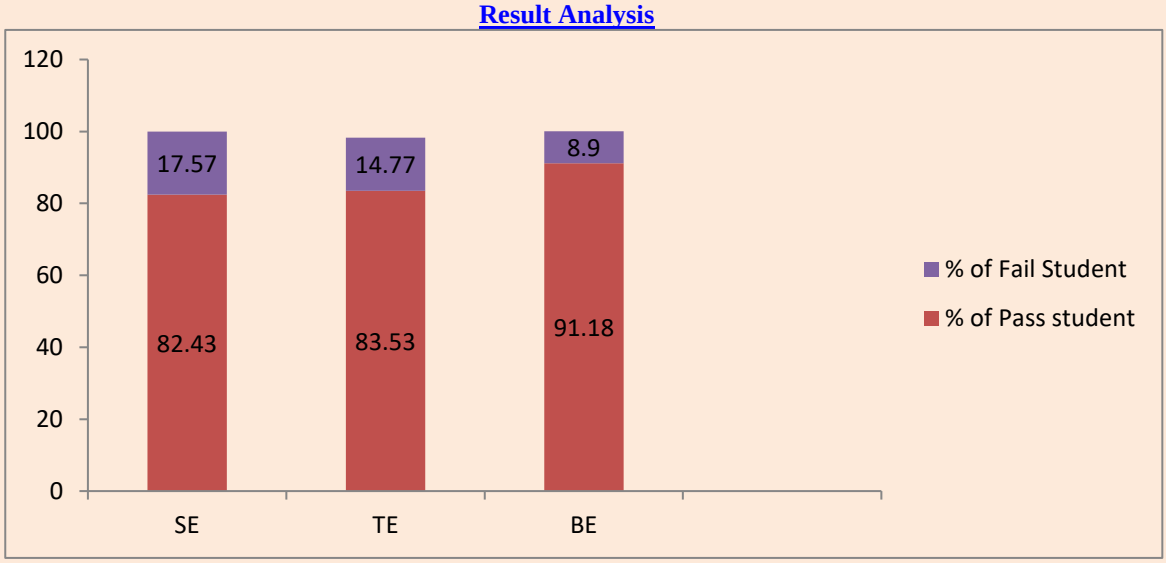
TE Subject Topper:

Sr. No.	Name of Subject	Name of Student	Max.Marks
1	Design of Machine Elements-I	Bhatiya Chirag Jaikishan	79
2	Heat Transfer	Bhatiya Chirag Jaikishan	71
3	Theory of Machines-Ii	Bhatiya Chirag Jaikishan	73
4	Metrology & Quality Control	Sinkar Suraj Balkrishna	78
5	Turbo Machines	Jagtap Shubham Subhash	68

BESubject Topper:

Sr. No.	Name of Subject	Name of Student	Max. Marks
1	Refrigeration and Air Condition	Raijade Vaishnavi Balasaheb	75
2	Cad/Cam and Automtion	Pathan Juber Iqbal	89
3	Dynamics of Machinery	Raijade Vaishnavi Balasaheb	85
4	Energy Audit and Management	Lahare Abhishek Sunil	80
5	Advanced Manufacturing Process	Patil Kamlesh Rajendra	73
6	Operation Research	Naoghare Pranish Manish	82

Result Analysis



Media Coverage:


Executive president Parminder Singh and other

1. **Biofuels and thermal barrier: A review on compression ignition engine performance, combustion and exhaust gas emission Elsevier, Journal of the Energy Institute, Volume 92, Issue 3, Pages 783**

The performance of an internal combustion engine is affected when renewable biofuels are used instead of fossil fuels in an unmodified engine. Various engine modifications were experimented by the researchers to optimise the biofuels operated engine performance. Thermal barrier coating is one of the techniques used to improve the biofuels operated engine performance and combustion characteristics by reducing the heat loss from the combustion chamber. In this study, engine tests result on performance, combustion and exhaust emission characteristics of the biofuels operated thermal barrier coated engines were collated and reviewed. The results found in the literature were reviewed in three scenarios: (i) uncoated versus coated engine for fossil diesel fuel application, (ii) uncoated versus coated engine for biofuels (and blends) application, and (iii) fossil diesel use on uncoated engine versus biofuel (and blends) use on coated engine. Effects of injection timing, injection pressure and fuel properties on thermal barrier coatings were also discussed. The material type, thickness and properties of the coating materials used by the research community were presented. The effectiveness and durability of the coating layer depends on two key properties: low thermal conductivity and high thermal expansion coefficient. The current study showed that thermal barrier coatings could potentially offset the performance drop due to use of biofuels in the compression ignition engines. Improvements ofup to 4.6% in torque, 7.8% in power output, 13.4% in brake specific fuel consumption, 15.4% in brake specific energy consumption and 10.7% in brake thermal efficiency were reported when biofuels or biofuel blends were used in the thermal barrier coated engines as compared to the uncoated engines. In coated engines, peak cylinder pressure and exhaust gas temperature were increased by up to 16.3 bar and 14% respectively as compared to uncoated condition. However, changes in the heat release rates were reported to be between -27% and +13.8% as compared to uncoated standard engine. Reductions of CO, CO2, HC and smoke emissions were reported by up to 3.8%, 11.1%, 90.9% and 63% respectively as compared to uncoated engines. Significant decreases in the PM emissions were also reported due to use of thermal barrier coatings in the combustion chamber. In contrast, at high speed and at high load operation, increase in the CO and CO2 emissions were also reported in coated engines. Coated engines gave higher NOx emissions by about 4- 62.9% as compared to uncoated engines. Combined effects of thermal barrier coatings and optimisation of fuel properties and injection parameters produced further performance and emissions advantages compared to only thermal barrier coated engines. Overall, current review study showed that application of thermal barrier coatings in compression ignition engines could be beneficial when biofuels or biofuel blends are used instead of standard fossil diesel. However, more research is needed combining coatings, types of biofuels and other engine modifications to establish a concrete conclusion on the effectiveness of the thermal barrier when biofuels are used in the compression ignition engine. Reduction of NOx emissions is another important R & D area.

Robotics engineering has taken a long path ahead in 2018 and although the year has not ended, there have been exciting instances of what the future possibilities of robotics may look like. The annual Consumer Electronics Show (CES) expo in Las Vegas held in January has showcased robotic trends that will dominate and cause a change in the times to come. In the coming years be braced for automated domestic cleaning robots, companion robots, automated self-driving cars, and AI-powered health and wellbeing technology. The most influential robotic inventions that have been unveiled this year prove to have a potential to change the way mankind transacts, shops or goes about the daily chores. Here are the most enthralling Robotic Inventions of 2018 that can help put together a picture of where the future of the industry lies.

2. **Ubtech Robotics Walker**

Ubtech has been a pioneer in the industry with its humanoid robots, including an Alexaenabled robot that can perform yoga too. However, the robot Ubtech previewed at the Consumer Electronics Show (CES) expo is its most ambitious project. The Ubtech Robotics Walker is a four-foot tall bot that has true bipedal motion, which enables it to not only walk around but go up and down stairs and even kick a soccer ball. The version that was showcased in the CES 2018 was an early model and did not have arms but by the time Ubtech Robotics Walker becomes available in 2019, it will have all of its limbs, with a host of new abilities according to company representatives. The technology marvel Walker is studded with sensors like cameras in its head and torso, and auto detection sensors in its feet and sides, which help the robot, know when it is close to an object. When armed with the right programming, the robot can avoid things such as chairs and tables which come in its way. Ubtech Robotics Walker responds to vocal commands as well as visual cues and its head is a large touchscreen which has a camera on the top to control your smart home, help schedule your calendar, play music and dance, patrol the home, and provide visual surveillance and motion detection.

3. **ForwardX CX-1 Robotics Suitcase**

CES 2018 showcased a notable tech the first smart suitcase custom built to follow the owner. Recently unveiled Forward.X CX-lnow called as Ovis is an autonomous piece of luggage designed to follow you around as you make your way from point A to B, and everywhere in between. Smart Technology isn't it! This autonomous suitcase has been commercially launched in Indiegogo (international crowd-funding website to buy unique

products), with early bird pricing beginning at $399. The robotic suitcase has been implanted with a pair of eyes and brain and represents a meeting between a wheeled gadget and computer vision, armed with the intelligence and cognition to tackle complex problems like predicting the user's path while avoiding obstacles.

Indeed, the Ovis has been branded as the world's first self-driving carry-on robot featuring an array of advanced tech, including a 170-degree wide-angle lens that hosts a built-in facial recognition software, allowing the device to follow the user at up to 7 miles per hour. Other exciting features that include obstacle avoidance work in tandem with the suitcase's tracking algorithm. Ovis comes with a smart wristband that works to keep thieves at bay, if the suitcase wanders out of range, the smart wristband bracelet will let the users know for an easy tracking.

4. **Somnox Sleep Robot**: Do you have irregular sleeping cycles? Do you toss and tum, read for hours to finally catch a nap?

What about an assisted sleeping robot that may help your way to sleep? Surprised? Well, Somnox's sleep robot can actually do that. The Somnox sleep bot looks more like a massive peanut; you hug it, to feel the soft rise and fall of its body, mimicking the users breathing. This calming effect is programmed to lull the user to sleep, as the breathing begins to match the slower pace of the robot's own, while the soothing sounds help to relax the mind.

An app configures the breathing patterns and the music, with the length of time the sleep robot stays active during the night. The device does not provide any sleep tracking data or a smart alarm clock which makes a room for improvement. At the moment, the robot does a basic function and is firmly built around the unusual breathing action. Somnox sleep bot comes with an expensive price tag it is sold through Indiegogo for nearly $600. That may be a lot of money for a gadget that may or may not help you sleep better and even does not provide any quantifiable data to establish how much difference it is making in your sleep.

5. **Boston Dynamics SpotMini:** Boston Dynamics, known to come up with uncannily agile robots, has unveiled its first commercial product to market, a small, dog-like robot it calls the SpotMini. The launch was announced in May with the

founder Marc Raibert adding that by July next year; Boston Dynamics will manufacture SpotMini at the rate of around 1,000 units per year. According to Raibert, SpotMini is currently in the testing stage for use in construction,security, delivery and home assistance applications. The SpotMini moves with the same smooth confidence as its processors rolled out by Boston Dynamics robots with names like Cheetah, Spot and BigDog. SpotMini is 3 feet high and weighs around 55 pounds, and can go where larger robots cannot. The robot comes with an optional snake-like arm, which attaches where a real dog's head would be, and can perform tasks like opening doors.

6. **Care OS Smart Mirror**: Magic mirrors that talk back to you, would not be restricted to be a feature of fairy tales

anymore. Science has made technological endeavours reach new heights. The Care OS mirror is another enthralling robotic marvel. The care OS deploys gesture controls and facial recognition to give skincare advice, and plays music and even takes selfies. It is similar to other smartphone apps in development which use the camera to study and analyse its user's dermatological health. Additionally, it provides advice about hydration and UV exposure, albeit on a much larger, domestic scale.