



**SRM**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University u/s 3 of UGC Act, 1956)

# **S**PECTRUM

The Newspaper of SRMIST

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## **A Massive Win**



The victorious Founder Chancellor paying respects to his Mother upon return from Perambalur.





## Chancellor honours Ms.M.Ilakkiya

STAFF WRITER

Ms. M. Ilakkiya, a class seven student, born in Pilimisai village, Perambalur district recently won a gold medal in the International Karate Championship held at Malaysia. Ilakkiya in the first week of May participated in the Ipoh city International karate championship 2019 and Okinawa Karate Championship - 2019 and won the gold medal in the KATTA and FIGHT category for under 17 years defeating her rival from Canada. Her parents Mr. Murugantham and Mrs. Geetha

are now residing at Chennai and working as daily wage workers at Koyambedu wholesale market. To honour her achievement, Dr. T.R. Paarivendhar, Founder Chancellor, SRM Group of Institutions handed over a cheque of 3 lakh rupees and wished her a good luck for her future achievements. "Karate will be added as one of the event in 2020 Olympics which is to be held at Tokyo, Japan. The young champion Ilakkiya is under age to participate in 2020, But I wish she should win the gold medal and bring

“... I wish she should win the gold medal and bring laurel to our country in 2024 Olympic which is to be held at Paris, France...  
-Chancellor”

laurel to our country in 2024 Olympic which is to be held at Paris, France”, he said.

## Mach's philosophy in Einstein's life

DIVYANSH MANSUKHANI  
BORE GAO

The early 20th century marked the emergence of one elegant construct, which went to revolutionize as the language for classical physics at least until now – the theory of Relativity. While significant credit for the demolition of absoluteness of space and time is paid to the German-born theoretical physicist Albert Einstein, the pre-existing literature on the corresponding philosophy by Ernst Mach, reading to which Einstein formalized his thoughts, tends to be forgotten. This article investigates how the Machist credo was knit in Einstein's seminal work, right from his 1905 paper entitled “On the electrodynamics of moving bodies” to his attitude towards the then springing quantum theory.



Born in 1838 and thus four decades elder to Einstein, Mach was one of the earliest philosophers who challenged the authority of the Newtonian principle, which he called as the “conceptual monstrosity of absolute space”. His philosophy is quite evident in his book “the Science of Mechanics”, in the preface of which he says that “this work is not a text to drill theorems of mechanics. Rather, its intention is ... an anti-meta-physical one”. On getting introduced to the book in 1897 by his close friend Besso, Einstein mentions in his autobiography that it shook his dogmatic faith in mechanics as the final basis of all physical thinking.

By showing in his 1905 paper that time is fundamentally relative using the ansatz that the speed of light is invariable, and by resulting, as a validation, into the same ‘transformation equations’ which H.A. Lorentz had come up with in the preceding year, Einstein basically formalized what Mach had been proposing throughout. Although this work gained prestige within those who saw themselves as philosophical heirs of Mach, the Vienna Circle, Mach himself dismissed it. As obvious it may seem, Einstein was deeply disappointed in Mach, in favor of whom he had once written to him in a letter that “I can't quite understand how Plank has so little understanding for your efforts”.

The other aspect of Machist philosophy that “physical principles should be based entirely on directly observable phenomena” deeply nested within Einstein the sense of accepting limited perceptions and theories. Although he might as well consider himself as one of the fathers of the quantum theory as he could explain the photo-electric effect, he never accepted the version to which it got evolved – the theory answerable by probabilities. What quantum theory did is to not exclusively define physical entities like position, but the probabilities of the subject to be discovered at that position, and that too, with uncertainties. His disbelief was illustrated in his 1935 paper called as EPR paradox, which was essentially a reply to E. Schrodinger in their letter series.

Although Einstein eventually claimed his disagreement with Mach on Mach's disagreement with relativity, we can never overlook the impression which Mach had on Einstein. We as authors and readers, can at most believe that our famous Albert Einstein wasn't flippant towards ‘the’ Ernst Mach, who had been Einstein's scientific guardian in his youth.

\* Divyansh Mansukhani – ECE, SRMIST and Former Special Student, EECS, Massachusetts Institute of Technology, Cambridge, U.S.

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## MoU with Apex Labs

STAFF WRITER

Apex Laboratories Pvt Ltd, a branded formulations player with 600 crore turnover, who pioneered the introduction of Zinc in the pharmaceutical formulations in India had signed MoU with Interdisciplinary Institute of Indian System of Medicine (IIISM) of Directorate of Research, SRM IST for Collaborative technical and development activities in the following fields with are regarded need of hour like Phyto formulation Development, Pre Clinical & Clinical trials on various disorders like Type 2 Diabetes mellitus, Hypothyroidism etc. The MoU signing ceremony was presided by Prof.N.Sethuraman, Registrar, SRM IST with Prof. SRS Prabakaran, Joint Director, Research, SRM IST. Ms.Subhashini, Executive Director, Apex Laboratories Pvt Ltd, V.Nagaraj, Executive Vice President, Apex Laboratories Pvt Ltd were also present during the ceremony.







*The Pro Vice Chancellor (External Affairs) (left) and the Registrar (right) felicitating the Chancellor*

# Addressing needs of people

A Staff Writer

To many commentators the victory of Dr. T.R. Paari Vendhar in the recently concluded elections to the 17th Lok Sabha is yet another feather in a cap that has so many distinctions. But to the Founder Chancellor of the SRM Group, it is a rare opportunity to address the causes and needs of the ordinary folk of India, especially his constituency of Perambalur.

With a massive win of over four lakh votes and joining the small group of people who had won in such a landslide, in Tamil Nadu and in India, the Chancellor was given a rousing reception at the Dr. T.P. Ganesan Auditorium upon his return from Perambalur soon after the official announcement of results.

In his address to students, faculty, administrators, non-

teaching staff and well wishers who had gathered to greet him, the Chancellor reiterated his campaign promises on various issues such as education, water scarcity and generally the developmental needs of his constituency. In fact the SRM Group has already started implementing his pledge to provide 300 students—50 each from six Assembly segments of his constituency—with free

education at the Chancellor's own personal cost in the fields of Engineering and Technology, Science and Humanities, Agricultural Sciences, Health Sciences and Management.

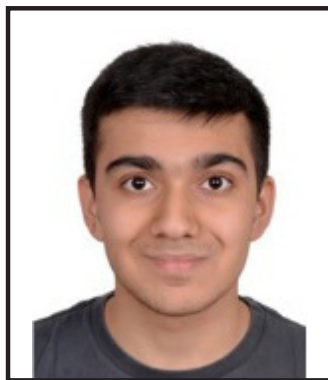
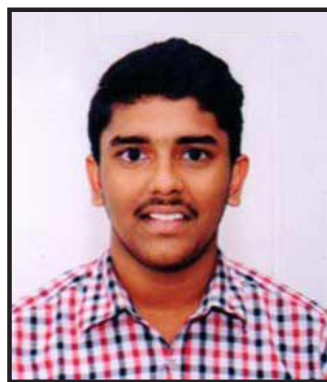
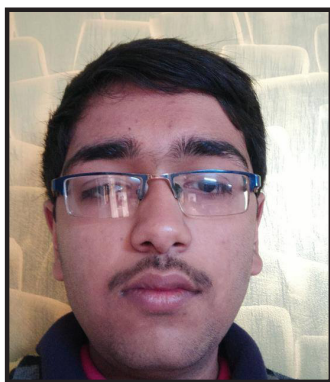
The Chancellor has always had agriculture and the concerns of the farmers as a top priority and the acute water shortage the state is facing right now. He has pledged to provide the most affected villages water

through tankers by mobilizing his own personal funds. And in a meeting with media persons in Trichy, the new Member of Parliament has said that he would take up the issue of having a new rail line in the Ariyalur-Perambalur-Thuraiyur-Namakkar sector so as to spur development besides facilitating the movement of farm produce and other commodities.



*The Controller of Examinations felicitating the Chancellor*





## Welcoming a new set of students!

### STAFF WRITER

SRM Group of Institutions announced the SRM Joint Entrance Examination for Engineering [SRMJEEE (BTech)] results recently and the first three rank holders are K V Vikram (TN), HarshitKedia (UP) and G BalaRatnaSwamy (AP).

The common concurrent counselling took place from 3rd May to 7th May 2019. Candidates attend the common counselling and sought admission to SRM Institute of Science & Technology (SRMIST), SRM University Haryana, and SRM

University – AP, Amaravati. The common concurrent counselling was at the following locations: Sonapat in Haryana, Modi Nagar in Ghaziabad, Amaravati in Andhra Pradesh, Ramapuram and Vadapalani in Chennai, and Kattankulathur near Chennai.

Arrangements were made with select banks for sanction of in-principle educational loan at the counseling venue.

Dr. T.R. Paarivendhar, Founder Chancellor, SRM Group of Institutions awarded several scholarships to recognize and reward highly talented students,

including Founders' scholarship for top 100 rank holders of SRMJEEE. Founder's scholarship awards 100% fee waiver towards tuition, hostel, and mess fees for all four years of study. 101 to 3000 rank holders are eligible for SRMJEEE merit scholarships, which awards tuition fee waiver varying from 100% to 25%.

Scholarships were also provided to students who have excelled in the field of sports, and arts & culture. SRM Alumni wards and SRM employee wards are eligible for scholarships. Additionally, there are scholarship provisions for students from weaker socio-

economic background, and for those who are differently-abled.

The SRM Institution attracts prospective students across the country and abroad. Around 1,40,000 students applied for SRMJEEE 2019 to secure an admission to B.Tech Programs. The computer based test took place in 123 cities including 5 cities in Middle East. The online test was administered from 15th to 25th April 2019.

The SRMJEEE merit list based on All India Rank was published on 27th April 2019. Diversity was well reflected in

the results with candidates from Tamil Nadu, Andhra Pradesh, Telangana, Uttar Pradesh and Maharashtra securing the top 10 positions. 310 candidates from Jammu & Kashmir and 150 candidates from North Eastern Region have also qualified in SRMJEEE. In terms of school boards, 45% were from CBSE, 23% from Andhra Pradesh Board of Intermediate Education, 12% are from Telangana Board of Intermediate Education, 7% are from Tamil Nadu Board of Higher Education, and 5% are from Council of Indian School Certificate Examination.

## 2019 Certificate of Commendation

### STAFF WRITER

SRM Institute of Science and Technology, ASCE SRM Student Chapter received a 2019 Certificate of Commendation by the Committee on Student Members, ASCE for its outstanding activities as recorded in the year 2018. This is a distinction earned by only the top 5% of all Student Organizations throughout world. The Committee on Student Members commended our Student Chapter's officers on our annual report for 2018. The chapter was awarded an exemplary remark for the huge amount

of meetings conducted along with student presentations and speakers from civil engineering profession. The collaborations with other student organisations and the field trips were also appreciated.

Through the year the Chapter accomplished its goals and assessments to a good degree by the hard work of its panel members Satish S, Amit Biswas, R Manoj, Laxmi Narayanan, Danica Padmachudar from B.Tech and M.Tech Civil Engineering under the guidance of Faculty Advisor Mr.S.Pradeep, Assistant Professor, Department of Civil



Engineering. Student Chapter is also involved in developing special projects wherein efforts are being put to generate community benefits using the engineering concepts.

The report submitted to the Committee on Student Members was given exemplary remarks and was said to have high quality of professionalism. Overall the report was marked

with a 'Very Good' submittal and was placed in the top 1/3 of student groups among 353 ASCE student chapters and International student groups for the year 2018.





## Follow your passion, Chancellor tells incoming Freshers

### STAFF WRITER

This admission season saw a registration of close to 1,40,000 students for taking SRM Joint Entrance Examination for Engineering (SRMJEEE). The online test was administered from 15th to 25th April 2019 in 123 venues across the country and 5 venues in Middle East. SRMJEEE rank list was published on 27th April 2019. 45% of candidates are from CBSE, 23% from Andhra Pradesh Board of Intermediate Education, 12% are from Telangana Board of Intermediate Education, 7%

are from Tamil Nadu Board of Higher Education, and 5% are from Council Of Indian School Certificate Examination.

The common concurrent counselling was scheduled from 3rd May to 7th May 2019. Candidates attending the common counselling sought admission in any of the four campuses of SRM Institute of Science & Technology (SRMIST), Delhi NCR Sonapat Campus of Haryana, and Amaravati Campus of AP. The common concurrent counselling was held at the following Campuses : Sonapat in Haryana, Modi

Nagar in Ghaziabad, Amaravati in Andhra Pradesh, Ramapuram and Vadapalani in Chennai, and Kattankulathur near Chennai.

Every day 16,000 candidates in 2 sessions attended the counselling, except for the first day where 12,000 candidates were called. During the counselling, allotment was done for 62 UG Engineering programs.

On the first day of counselling, Dr. T.R. Paarivendhar, Founder Chancellor, SRM group of institutions awarded several scholarships to recognize and reward highly meritorious

students and Gomathi Mariappan who bagged gold in Asian athletic championship recently was felicitated and given a cheque of rupees 5 Lakhs for her achievement. During his address he stated that "I am very delighted to start the first day of counselling with a renowned sports personality who made India proud. I wish students to follow their passion rather sticking to one course as every courses offered at SRM will give a unique chance of growth for their future" the chancellor said. Prof. Sandeep Sancheti, Vice Chancellor SRMIST explained

the features and progressive opportunities available at SRM for students. Prof. N. Sethuraman, Registrar and Prof. T.V. Gopal, Director Admissions, SRMIST welcomed parents and candidates who were a part of counselling.

Under Founders' Scholarship 20 students received 100% waiver of tuition and hostel fees. In addition to the above, Socio – Economic scholarship, differently-abled scholarship, Employee ward scholarship, SRM Arts & culture scholarship and scholarships to outstanding sports persons were awarded



# Are You Ready For The Change?

## STAFF WRITER

This Management Development Program (MDP) was inaugurated by Dr. Michael Barnes, Director of School of Management, gave an inspiring inaugural address. Dr. V.M. Ponnaiah Dean, School of Management Welcomed all the Corporate Participants in his own charismatic and inimitable style and also concluded the whole day session with his valedictory address. Our Pro-VC Dr. T.P. Ganesan graced the occasion.

The MDP and Consultancy Cell of School of Management spearheaded by Dr. M.G. Bhaskar, conceived this third successful MDP, gave an over view and the importance of this topic, meant for the benefit of Automobile sector.

The resourceful industry luminaries, detailed and brain stormed many aspects during the transition from HR to Shop Floor and Operations to Sourcing and Outsourcing vendors to Overall Finance, gave in-depth knowledge to the participants.

This MDP from SRM SOM sponsored by ACMA (Automobile

Components Manufacturers Association) was well attended by more than thirty five participants from automobile / public sector organizations.

A Snap shot of the Resource persons illuminating presentations from leading automobile organizations:

Mr. V. Ramasubramaniam, GM, HR, Rane Holdings Limited - set the tone for the day covering the different perspectives of the transition to the electric vehicles. His presentation was quite comprehensive pointing the various dimensions of the transition. In particular, he touched upon the skill shortages and the type of re-skilling to be done to enhance the quality of the existing work force.

Mr. Sriram Gopalakrishnan, India R & D Director, Valeo India Private Ltd - delved deep into the technological challenges posed by the transition from the ICE to EV. He presented in detail about the shrinkage in number of automobile parts because of the transition. He also gave a global scenario about the electric vehicles and how many progressive countries in Europe are embracing the new



technology. His presentation with live examples of how Valeo is in the forefront of changing technological innovations gave good impetus to the audience.

Dr. S. Rajkumar, Senior Vice President – Operations, Rane Engine Valves Ltd - covered the minute details of changes in the shop floor arising out of the death of the IC engines and the birth of the electric vehicles. He also elaborated on the nuances in the making of electric vehicles. His presentation

was well interspersed with the lot of examples of how Rane is gearing up itself as an OEM supplier.

Mr. P.K. Ranganathan, who was formerly with Ashok Leyland Ltd as Chief financial officer, was quite eloquent about the phenomenal financial implications of the new technology and how the existing automobile players have to face the challenges head on. He also expressed concern about the demise of certain existing players, while new and unknown players are likely to emerge in this sector. His presentation exhibited his financial knowledge about the industry as well as his playing an advisory role to the policy makers about the automobile sector. Mr. K. Chandrasekhar, National Programme Coordinator - ACMA-UNIDO-DHI Partnership program - hovered around the macro aspects of the transition from IC engine to electric vehicles. With his knowledge of the industry for the past four decades he profusely quoted the

examples of different automobile organizations and the need for waking up to the realities. He also summed up the day's proceedings in a lucid way.

All the resource persons of the MDP were in agreement with the big challenges ahead, especially the changing business models. Also they expressed in unison that the IC engines as well as the EVs will co-exist till next decade.

It was also well understood that the skill shifts would take place from engine, fuel injection and exhaust management to energy storage systems and Electric-motor design and development. Hence, the need for the education sector to think more about systems engineering, mechatronics, embedded systems, material science etc. This MDP was actively supported by SRM Director – Corporate Relations Dr. S. Ganapathy, and coordinated by SRM School of Management's faculty and by a group of enterprising first year MBA Students.

“ The resourceful industry luminaries, detailed and brain stormed many aspects during the transition from HR to Shop Floor and Operations to Sourcing and Outsourcing vendors to Overall Finance, gave in-depth knowledge to the participants. ”





# Creating awareness of oral cancer

STAFF WRITER

Oral cancer is the 11th most common cancer in the world, accounting for an estimated 300,000 new cases and Two-thirds of the global incidence of oral cancer occurs in low- and middle-income countries, half of those cases are in South Asia. India alone accounts for one-fifth of all oral cancer cases and one-fourth of all oral cancer deaths. When primary prevention fails, early detection through screening and relatively inexpensive treatment can avert most deaths. However, oral cancer continues to be a major cancer in India. In accordance to that an Anti cancer Awareness campaign has been initiated and an Anti cancer torch has been circulated in India by the Indian Association of Oral and Maxillofacial Pathology. The torch has reached SRM KATTANKULATHUR Dental College and as an effort to spread awareness No Tobacco Rally was organised in the presence of the guest of honour, Dr.Nadeem Jeddy, Honourary secretary, IAOMP. The event was inaugurated by Dr.S.Ponnusamy, Controller of Examinations, SRM Institute of science and technology. The programme was organized under the guidance of Dr.Vivek.N, Dean,SRM Kattankulathur Dental College and Dr. Magesh KT, Vice principal. 150 -200 students and staff of the Dental college marched carrying play cards from depicting the ill effects of smoking and tobacco. Street play was enacted to create social awareness.



## Another state of art facility at SRMIST

STAFF WRITER

SRMIST has added another state of art facility, the X-ray photoelectron spectroscopy (XPS) in its Kattankulathur campus. The other existing state-of-the-art facilities at SRMIST include High resolution Transmission electron microscope (HR-TEM), Field Emission Scanning Electron Microscope (FESEM), Vibrating Sample Magnetometer (VSM), X-ray Diffractometer (XRD), Scanning Probe Microscope (SPM), Micro-Raman spectrometer, Gas-Chromatography Mass-Spectrometry (GCMS), High resolution mass spectrometry (HRMS), Nuclear Magnetic Resonance Spectrometer (NMR-500MHz), Six axis modular spine testing machine, High Performance Computer cluster, a supercomputer that is typically used for scientific and engineering applications etc., XPS also known as Electron Spectroscopy for Chemical Analysis (ESCA) is an advanced surface analysis technique that provides chemical composition, chemical state and hence chemical bonding information on the surfaces of almost all materials. This facility (Model: PHI VersaProbe III Scanning XPS Microprobe, Physical Electronics, USA) is fully sponsored by SRMIST with a cost of ~ 4.03 crore INR (USD 580,000).

Dr. D. K. Aswal, Director, National Physical Laboratory (NPL) New Delhi has inaugurated the XPS facility on 24-04-2019 and delivered a talk on X-ray Photoelectron spectroscopy to research scholars and faculty members. "XPS facility at SRMIST will enable the research scholars and scientists working in thrust areas like

“ Providing hands-on operational and analytical training to the undergrad and postgraduate students with such advanced techniques as part of their academic course will help them to excel in research as well as in industrial R&D sectors ”

energy (solar cells, Li-ion batteries, thermoelectrics), electronic devices (sensors, transistors, photodetectors and light emitting diodes) and advanced nanomaterials (air filters, photo catalyst) to further understand the chemical state of the atoms and electronic structure of the materials. This will strengthen the research findings and hence pave the way for high impact publications and patents”, he quoted. Dr. C. Muthamizhchelvan, Director, Engineering and Technology added that SRMIST is one among few premier institutes like IIT-Madras to have XPS facility with advanced features like scanning XPS microprobe and ultraviolet photoelectron spectroscopy (UPS) housed in a single unit. This facility can be used to understand many industrial

problems like environmental pollution (automobile emissions or water contamination), surface contamination & oxidative state of elements in automotive industry, energy storage, healthcare, pharmaceutical industry, oil refineries and semiconductor industry. Providing hands-on operational and analytical training to the undergrad and postgraduate students with such advanced techniques as part of their academic course will help them to excel in research as well as in industrial R&D sectors. This XPS facility can be accessed by researchers in other academic institutions by online booking. Also teachers and students from other colleges across the country will be trained in this facility through workshops/short term training conducted periodically by SRMIST.





# Sustaining development through Education... Leaving no one behind

## STAFF WRITER

SRM Institute of Science and Technology, Chennai and TERRE Policy Centre, a not-for-profit environmental organization, Pune organized the SRM Group Meeting on SDGs and Smart Campus Cloud Network and roundtable consultation on “Mainstreaming SDGs in Education and building the partnership through Smart Campus Cloud Network (SCCN)”.

The lead remarks about SDG’s programme implemented Indian Universities and their development among all Universities were given by Prof. Bhushan Patwardhan (Vice Chairman UGC). The lead message from Prof. M P Poonia (Vice Chairman AICTE) about the Mainstreaming SDGs in Education and building the partnership among the universities was given by Shri. M. Sundaresan, Regional Officer & Assistant

Director in the meeting. Dr. T.R. Paarivendhar, Founder Chancellor, Prof. Sandeep Sancheti, Vice Chancellor and Prof. N. Sethuraman, Registrar, SRMIST participated in the roundtable consultation.

History was made when Agenda 2030 for Sustainable Development, called “No One Is Left Behind” was adopted by all Member States of United Nations in 2015. The Agenda provides a shared blueprint for peace and prosperity for people and the planet, to achieve the 17 SDGs by 2030 which constitute a clarion call for action by global partnership.

Understanding the urgency, TERRE Policy Centre has launched Smart Campus Cloud Network (SCCN) with a vision to create a global network of the education campuses of schools, colleges, institutes and universities



committed to make a tangible contribution to the UN SDGs. UNESCO, UGC and AICTE have keenly supported SCCN. SRM Institute of Science and Technology in association with TERRE Policy Centre organized

and successfully completed the roundtable consultation on how to leverage SCCN to build extensive partnerships. Other invitees included high level officials from universities, VCs, Deans and experts participated

for the round table discussion. All members discussed about their universities SDG’s goals development and given the valuable suggestion to improve the SDG’s Goals in the University campus level all over the India.



*The Registrar and Vice Chancellor of SRMIST with participants*