

Science & Technology

SPACE debate winners



67 Students from eleven schools of Chennai had participated to express their views on Astronomy explorations during an Inter-School Debate Competition conducted by SPACE in collaboration with St. John's Public School, Panel of judges had the eminent presence of C. Shanmugam, Senior Research Fellow, Dept. of Chemistry, Anna University and the winners are: Category 1 (6std to 8 std) First Prize (Rs 5,100 cash) Sanjana John-Grade 8, St. John's International Residential School, Residential School, Palanjur. Second Prize (Rs 3,100 cash) Dhanamuthan-Grade 8, Ryan International School, ETA Globevill Mambakkam Village, Sriperumbudur-Taluk, Kanchipuram-Dist, Tamilnadu. Pin:602106. Third Prize (Rs 2,100 cash) Sajith Deva Reddy-Grade 8, HLC International School, Wing Haven Gardens Road, Sholinganallur, Karanai, Category 2 (9 Std to 12std) First Prize (Rs 5,100 cash) Sandeep Solomon 11 std, St. John's Public School, Lake Bund Road, near Medavakkam. Second Prize (Rs 3,100 cash) Gowri raj Varma-Grade 11, Lalaji Memorial Omega International School, Pallavaram Road, Kolapakkam and Third Prize (Rs 2,100 cash) Yukthi Rao-9std, Vel's Vidyashram Senior Secondary School, P.V.Vaithiyalingam Road, Velan Nagar, Pallavaram.

Smart graphene membrane to desalinate water



An international team of researchers, including scientists from Shinshu University (Japan) and the director of Penn State's ATOMIC Centre, has developed a graphene-based coating for desalination membranes that is more robust and scalable than current nanofiltration membrane technologies. The result could be a sturdy and practical membrane for clean water solutions as well as protein separation, wastewater treatment and pharmaceutical and food industry applications.

"Our dream is to create a smart membrane that combines high flow rates, high efficiency, long lifetime, self-healing and eliminates bio and inorganic fouling in order to provide clean water solutions for the many parts of the world where clean water is scarce," says Mauricio Terrones, professor of physics, chemistry and materials science and engineering, Penn State. "This work is taking us in that direction."

The hybrid membrane team developed uses a simple spray-on technology to coat a mixture of

graphene oxide and few-layered graphene in solution onto a backbone support membrane of polysulfone modified with polyvinyl alcohol. The support membrane increased the robustness of the hybrid membrane, which was able to stand up to intense cross-flow, high pressure and chlorine exposure. Even in early stages of development, the membrane rejects 85 per cent of salt, adequate for agricultural purposes

though not for drinking, and 96 per cent of dye molecules. Highly polluting dyes from textile manufacturing are commonly discharged into rivers in some areas of the world.

Chlorine is generally used to mitigate biofouling in membranes, but chlorine rapidly degrades the performance of current polymer membranes. The addition of few-layer graphene makes the new membrane highly resistant to chlorine.

Graphene is known to have high mechanical strength, and porous graphene is predicted to have 100 per cent salt rejection, making it a potentially ideal material for desalination membranes.

However, there are many challenges with scaling up graphene to industrial quantities including

controlling defects and the need for complex transfer techniques required to handle the two-dimensional material. The current work attempts to overcome the scalability issues and provide an inexpensive, high quality membrane at manufacturing scale.

First author Aaron Morelos-Gomez says, "Our membrane overcomes the water solubility of graphene oxide by using polyvinyl alcohol as an adhesive making it resistant against strong water flow and high pressures. By mixing graphene oxide with graphene we could also improve significantly its chemical resistance"

Professor Morinobu Endo concludes that "This is the first step towards more effective and smart membranes that could self-adapt depending on their environment."

What changes when you warm the Antarctic Ocean just 1 degree?



After warming a natural seabed in the Antarctic Ocean by just 1° or 2° Celsius, researchers observed massive impacts on a marine assemblage, as growth rates nearly doubled. The findings of what the researchers call the "most realistic ocean warming experiment to date" show that the effects of future warming may far exceed expectations.

"I was quite surprised," says Gail Ashton of the British Antarctic Survey and Smithsonian Environmental Research Centre. "I wasn't expecting a significant

observable difference in communities warmed by just 1°C in the Antarctic. I have spent most of my career working in temperate climates where communities experience much greater temperature fluctuations and wasn't expecting such a response to just 1°C of change."

Predicting how organisms and whole communities will respond to climate change in the future remains a major challenge. So, Ashton and her colleagues decided to actually warm an area of seabed around the Rothera Research Station and watch

what happened.

They deployed heated settlement panels to warm a thin layer of water by 1°C or 2°C above the ambient temperature. Those increases in global temperature are expected within the next 50 and 100 years, respectively.

The experiment showed that with a 1°C increase in temperature, a single pioneer species of bryozoan (*Fenestrulina rugula*) took off. That one species ultimately dominated the community, driving a reduction in overall species diversity and evenness within two months.

Individuals of a marine worm, *Romanchella perrieri*, also grew to an average size 70 percent larger than those under ambient conditions, the researchers report.

The responses of organisms to a 2°C rise in temperature were much more variable. Growth-rate responses to warming differed among species, ages, and seasons. Species generally grew faster with warming through the Antarctic summer. However, different responses among species were observed in March, when both food availability for suspension

feeders and ambient temperature declined, the researchers report.

The researchers say the findings suggest that climate change could have even greater effects on polar marine ecosystems than had been anticipated. As the planet warms, there will be winners (like the bryozoan *Fenestrulina rugula*) and losers.

The researchers say they now plan to expand the use of this technology to investigate the response to warming in other locations and communities, including the Arctic.

notice. "I was quite surprised," says Gail Ashton of the British Antarctic Survey and Smithsonian Environmental Research Centre. "I wasn't expecting a significant

DUGAR HOUSING DEVELOPMENTS LTD
 Regd. Office: Dugar Towers, 7th Floor, 34 (123),
 Marshalls Road, Egmore, Chennai-600 008.
 Tel: 28587878 Fax:2852244 Email: info@dhdindia.com Website:www.dhdindia.com

NOTICE
 Notice is hereby given that the 25th Annual General Meeting of the company will be held on Thursday, the 28th September 2017 at 10.00 A.M. at Platinum Hall in Presidency Club, No.51, Ethiraj Salai, Chennai - 600 008, to transact the ordinary business as set out in the notice which is posted to the members to their registered address.

The Registrar of Members and Share Transfer Book of the company will remain closed from Friday the 22nd September 2017 to 28th September 2017 (Both days inclusive) in connection with the Annual General Meeting of the company.

By order of the Board
 Place : Chennai For **DUGAR HOUSING DEVELOPMENTS LTD**
 Date : 04.09.2017 DIRECTOR

NEYCER INDIA LIMITED
 Registered Office of the Company at No.145, St. Mary's Road,
 Alwarpet, Chennai 600 018

NOTICE
 Notice is hereby given that Pursuant to clause 29(1) read with Regulation 47 of SEBI (Listing Obligations and Disclosure Requirements) Regulations 2015, meeting of the Board of Directors of the Company is scheduled to be held on Monday, 11th September, 2017 at "Manasa" St. Mary's Road, Chennai-600018, to inter-alia consider, approve and take on record the unaudited financial results of the Company for the quarter ended 30th June 2017 among other businesses.

Place: Chennai For **Neycer India Limited,**
 Dt.05.09.2017 Director.

TWENTYFIRST CENTURY MANAGEMENT SERVICES LIMITED
 Regd. office: No.67, Old No.28-A, Door No.g-3,
 Eldams Road, Alwarpet, Chennai - 600 018
 TELEPHONE +91 44 42030149, FAX +91 44 24328452
 WEBSITE: www.tcms.bz; e-mail: Investors@tcms.bz
 CIN: L74210TN1986PLC012791

NOTICE
 Notice is hereby given pursuant to Regulation 29(1)(a) read with Regulation 47 of the SEBI (Listing Obligation and Disclosure Requirement) Regulation 2015 that a meeting of the Board of Directors of the company will be held on Friday, the 8th September 2017 at 3.00 p.m. at the Corporate office of the Company at Grease House, Zakaria Bundar Road, Sewree- West, Mumbai - 400 015, inter- alia to consider and take on record the Unaudited Financial Results for the quarter ended 30th June 2017.

This information is also available on the website of the company at www.tcms.bz and on the website of the Stock Exchange, Mumbai - www.bseindia.com and of National Stock Exchange of India Limited, Mumbai - www.nseindia.com

By Order of the Board
 For **TWENTYFIRST CENTURY MANAGEMENT SERVICES LIMITED**
 SD/ (A.V.M.Sundaram)
 PLACE: CHENNAI COMPANY SECRETARY
 DATE: 2nd September 2017

GOVERNMENT OF TAMILNADU
TECHNICAL EDUCATION DEPARTMENT
 FORM OF CONTRACT: LUMSUM
 TENDER NOTICE NO. DB/18CETE/TECH/18/D0.4.D.05.09.2017.
 For and on behalf of the Governor of Tamil Nadu sealed tenders will be received from the Registered Contractors of Public Works Department, for the works noted below by the Chief Engineer, PWD, Technical Education Circle, Chennai-600 025

Sl. No.	Name of Work	Approx. Value of work (Rs. in lakhs)	EMD Amount Rs.
1	Construction of 5 class room building under RUSA scheme in Namakkal Kavinagar Ramalingam Government Arts College for women at Namakkal.	61.00	40500/-
2	Construction of common Dining hall for ladies hostel in Bharathiyar University, Coimbatore.	74.00	47000/-
3	Construction of second floor over the existing Bio Technology building near indoor stadium in Bharathiyar University, Coimbatore.	165.00	92500/-

Period of Completion: For the work: Sl No. 1 to 3: 5 months, Contractor Class: Sl No. 1 & 2: class II and above, Sl No. 3: class I, Last Date for receipt of tender: Upto 3.00PM on 27.09.2017, Date of opening of tender: at 3.00PM on the same day, Date of availability of tender documents: 17.09.2017 to 26.09.2017. Cost of tender schedule: Rs.15000 + 1800/-, EMD to be credited: Sl No. (1) Executive Engineer, PWD, Technical Education Division, Trichy, Sl No. 2 & 3, EE, TED Coimbatore. Tender documents & other details are available in "www.tenders.tn.gov.in". Any other details can be had from the office of the Chief Engineer, PWD, Technical Education Circle, Chennai - 600025 during working hours.

Chief Engineer, PWD
 Technical Education Circle, Chennai - 25
 DIPR/3853/Tender/2017

KANCHI KARPOORAM LIMITED
 Regd. Office/Works: Parandur Road,
 Village Enathur, Karaipettai Post,
 Kanchipuram Taluk, Tamilnadu - 631 552
 CIN: L30006TNPLC022109

NOTICE
 Notice is hereby given that the Meeting of the Board of Directors of the Company will be held on Thursday, 14th September, 2017 at the Chennai Office of the Company No.1, Barnaby Avenue, Barnaby Road, Kilpauk, Chennai - 600 010 at 03.30 P.M to consider and take on record the Un-audited Financial Results of the Company for the Quarter ended 30th June, 2017.

Pursuant to this, as per the Company's Code of Conduct, adopted by the Board pursuant to SEBI (Prohibition of Insider Trading) Regulations, 2015 the Company has decided the close period (i.e. Closure of trading window) for the insiders from 06.00P.M on 5th September, 2017 and ends after 48 hours of the results are made public on 14th September, 2017.

For **KANCHI KARPOORAM LIMITED**
 Place : Chennai Krithika D Thakkar
 Date : 06.09.2017 Company Secretary

LASER DIAMONDS LIMITED
 B-28, Basement, City Centre No.232/186, Purasawalkam High Road,
 Kilpauk, Chennai-600010
 L52599TN1995PLC029777

NOTICE
 The Board of directors of the Company, at the meeting held on 30.09.2017 have approved the following:

- 23rd Annual General meeting of the Company will be held on Saturday, the 30th September 2017 at 10.30 am at "RAGAAS", No.47, 1st Avenue, Sastri Nagar, Chennai - 600 020.
- Appointment of Mr.Bharat Kumar N Jain as statutory auditors of the Company for a period of 5 years from the conclusion of this AGM till the date of AGM to be held in 2022 at such remuneration as may be decided by the Audit committee / Board of Directors and as agreed by the auditors.
- The register of members and share transfer books of the company shall remain closed from September 24th 2017 to September 30th 2017 (both days inclusive).

The meeting commenced at 11.30 am and ended at 12.30 pm
 For **LASER DIAMONDS LIMITED**
 SD/ (sd)
 Place : Chennai Kanchan Samdaria
 Date : 24.08.2017 Director

YKM INDUSTRIES LIMITED.
 CIN:L05001TN1994PLC028263
 No. 4 Jayalakshimpuram 1st street,
 Nungambakkam Chennai-600034
 Phone No 91-44-42113810 Fax 28212494
 Email: ykmindustriesslimited@gmail.com

NOTICE FOR E-VOTING & BOOK CLOSURE
 Notice hereby given that the 23rd Annual General Meeting (AGM) of the members of the Company will be held on 25th September, 2017 at 10.00 A.M. at No. Jayalakshimpuram 1st Street, Nungambakkam Chennai-600034 to transact the Ordinary Businesses as set out in the Notice of the AGM.

Notice is also given under Section 91 of the Companies Act, 2013 read with Rule 10 of the Companies (Management and Administration) Rules 2014 that the Register of Members and Share Transfer Books of the Company shall remain closed from **day, 23rd September, 2017 to 25th day, September, 2017** (both days inclusive) for the purpose of the AGM.

The Company has completed the despatch of the Notice of AGM and the Annual Report for the year 2016-17. The communication relating to remote e-voting, inter-alia, containing user ID and password has been dispatched to the members.

Pursuant to the provisions of Section 108 of the Companies Act, 2013 read with Rule 20 of the Companies (Management and Administration) Rules 2014, as amended by the Companies (Management and Administration) Amendment Rules, 2015 and Regulation 44 of the Listing Regulations, remote e-voting facility has been made available to the members to exercise their right to vote. The Company has engaged the services of NSDL to provide remote e-voting facility. The details of the remote e-voting are as under:

- Date and time of commencement of remote E-voting: 22nd September, 2017 at 09.00 a.m
- Date and time of end of remote E-voting: 24th September, 2017 at 5.00 p.m.
- Remote e-voting shall not be allowed beyond this 24th September 2017, (5.00 p.m.)
- Cut-off date: (date - Seven days before 18th September, 2017
- A member may participate in the General Meeting even after exercising his right to vote through remote e-voting but shall not be allowed to vote again in the meeting; and
- A person whose name is recorded in the register of members or in the register of beneficial owners maintained by the depositories as on the cut-off date only shall be entitled to avail the facility of remote e-voting as well as voting in the General Meeting
- Notice of the Annual General Meeting has been displayed on the web site of the Company www.ykmindustries.com and on website of e-voting platform provided by National Securities Depository Limited i.e. www.evoting.nsdl.com/
- In case you have any queries or issues regarding e-voting, write an email to ykminindustriesslimited.com.or contact Mr N.G.Anbumani Phone No 9176014006 .Email Id nganbumani@gmail.com

By Order of the Board of Directors
 For **YKM Industries Limited**
 Y.MeeraReddy
 Managing Director

Place: Chennai
 Date: 2nd September 2017

BHAGWANDAS METALS LIMITED
 CIN: L28931TN1982PLC009418
 Regd. Office : No.61, Sembudoss Street, Chennai - 600 001
 Tel. No. 0442523 3049/42113801. Email: bml@vsnl.net
 Website : www.metal-bml.com

NOTICE
 NOTICE is hereby given that:-

- The 35th Annual General Meeting of the members of the Company will be held on Monday 25th September 2017 at 10.00 A.M. at Asha Nivas, 9, Rutland Gate 5th Street, Chennai - 600 006 to transact business as detailed in the Notice convening the Annual General Meeting.
- The Register of Members of the Company and Share Transfer Books will remain closed from Tuesday 19.09.2017 to Monday 25.09.2017 (both days inclusive) for the purpose of the Annual General Meeting, in terms of Section 91 of the Companies Act, 2013 read with Rule 10 of the Companies (Management & Administration) Rules 2014.
- The Company is pleased to provide all its Members, the facility to exercise their votes through electronic voting (e-voting) in association with the Central Depository Services (India) Limited (CDSL). Members holding shares as on the cut-off date of 18.09.2017 may cast their vote electronically.

Members are informed that:-

- All the Ordinary business as set out in the Notice of the AGM can be transacted through e-voting
- The Notice was dispatched to all the Members on 02.09.2017
- Any person, who acquires shares of the Company and become member of the Company after dispatch of the notice and holding shares as of the cut-off date i.e. 18.09.2017, may obtain the login ID and password by sending a request at bml@vsnl.net or RTA.
- Voting through electronic mode shall commence on Friday 22.09.2017 at 09.00 A.M. and will end on Sunday 24.09.2017 at 5.00 P.M.
- Voting through electronic mode shall not be allowed beyond 5.00 P.M. on 24.09.2017
- The Company has opted to provide at the AGM venue, the physical voting facility by circulation of Ballot forms for all those members who are present at the AGM and have not cast their votes by availing the remote e-voting facility.
- A member may participate in the General meeting even after exercising his right to vote through remote e-voting but shall not be allowed to vote again in the meeting.
- A Copy of the Notice is available on the website of the Company at www.metal-bml.com in and also on the website of CDSL at <https://www.evotingindia.com/>
- In case of any queries members may refer the instructions on e-voting contained in the Notice or refer the Frequently Asked Questions (FAQs) and user manual on the e-voting website of CDSL or contact CDSL on Telephone No. (022) 22725040 to get further clarifications. Members can opt only one mode of voting, i.e., either by Physical Ballot or e-voting. If a Member casts votes by both modes, then voting done through e-voting shall prevail and Ballot shall be treated as invalid
- Members can opt only one mode of voting, i.e., either by Physical Ballot or e-voting. If a Member casts votes by both modes, then voting done through e-voting shall prevail and Ballot shall be treated as invalid

By Order of the Board of Directors
 for **BHAGWANDAS METALS LIMITED**
 GOVIND PRASAD
 CHAIRMAN

Date: 06.09.2017
 Place: Chennai

ARUNA HOTELS LIMITED
 CIN: L15421TN1960PLC004255
 Regd. Off: Aruna Centre, 145, Sterling Road, Nungambakkam,
 Chennai - 600 034. Ph.No: 044-25321067, Fax: 044-66112277
 E-mail: directorsaruna@gmail.com, Website: www.arunahotels.com

NOTICE
 The shareholders of ARUNA HOTELS LIMITED are hereby informed that the 55th Annual General Meeting of the company will be held on Thursday, 28.09.2017 at 9.00 am, at "Youth Hostel" 2nd Avenue, Indra Nagar, Chennai-600020, and the company has on 06.09.2017, already completed the dispatch of Notice of the Annual General Meeting along with Explanatory Statement and Annual Report of the Company for the financial year ended 31st March 2017, as per Rule 20 of the Companies (Management & Administration) Rules, 2014.

NOTICE is also hereby given pursuant to Section 91 of the Companies Act, 2013, and Regulations 42 of SEBI (LODR), Regulation, 2015 the Register of Members and the Share Transfer Books of the Company will remain closed from 22.09.2017 to 28.09.2017 (both days inclusive) for the purpose of AGM.

A copy of the Annual General Meeting notice is displayed at the company's website (www.arunahotels.com) and CDSL Website (www.evotingindia.com).

Pursuant to the provisions of Section 108 of the Companies Act, 2013 read with Rules made thereunder and Regulation 44 of SEBI (LODR) Regulations, 2015, the Company is pleased to offer e-voting facility to its members to exercise their right to vote by electronic means on all the resolutions through e-voting services provided by Central Depository Services Limited (CDSL).

The voting period shall commence on Sunday, 24th September 2017 at 09.00 a.m. and ends on Wednesday, 27th September 2017 at 05.00 p.m. Voting shall not be allowed beyond 05.00 P.M. on 27.09.2017. The voting rights shall be reckoned on 21st September 2017, which is also the cutoff date.

The Board of Directors have appointed Mr. M.Damodarani, Proprietor of M.S.Damodarani & Associates, Practicing Company Secretaries, having office at New No.6, Old No.12, Appavoo Gramani 1st Street, Mandaveli, and Chennai - 600028, as a scrutinizor for conducting the e-voting process in a fair and transparent manner.

Any grievances whatsoever in relation to the e-voting process can be taken up with and shall be redressed by Mr.Ajay Shukla, Company Secretary (ajshukla@arunahotels.com) and CDSL Email ID: helpdesk.evoting@cdslindia.com.

Kindly Note that once you have cast your vote through e-voting, you cannot modify or Vote on poll at the AGM. The Results of E-voting will be announced by the Company on its Website and also informed to the Stock Exchange.

By Order of the Board
 Sd/- Vaithiyalingam Anbalagan
 Managing Director, DIN: 00059007

Date : 07.09.2017
 Place : Chennai