**TWAS 25th General Meeting**

26 – 29 October 2014  
Al Bandar Hotel, Muscat, Sultanate of Oman

**Detailed Programme (as of 24 October)**

**Saturday, 25 October 2014**

Dark shade: closed sessions (for members only)

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| **08:30-10:00** | **TWAS Prizes Committee Meeting** *Majilis* | | | | | | |
| *10:00-10:15* | *Refreshments* | | | | | | |
| **10:15-12:30** | **TWAS Elections Committee Meeting** *Majilis* | | | | | | |
| *12:30-14:00* | *Lunch Ballroom Terrace* | | | | | | |
| **14:00-15:45** | **TWAS Policy Development & Future Action Committee Meeting**  *Qalhat* | **Regional Meetings of TWAS Members and Vice President (Arab)**  *Assifah* | **Regional Meetings of TWAS Members and Vice President (Central and South Asia)**  *Ballroom A* | | **Regional Meetings of TWAS Members and Vice President (Latin America & Caribbean)**  *Ballroom B* | **Regional Meetings of TWAS Members and Vice President (Sub-Saharan Africa)**  *Majilis* | **Regional Meetings of TWAS Members and Vice President (East and South East Asia & Pacific)**  *Ballroom C* |
| *15:45-16:00* | *Refreshments* | | | | | | |
| **16:00-17:00** | **TWAS Regional Offices Annual Meeting**  *Sidab* | | | **TWAS-OWSD Advisory Panel for Women in Science Meeting**  *Qurayat* | | | |
| **17:00-19:00** | **TWAS 34th Council Meeting** *Majilis* | | | | | | |
| *19:30* | *Dinner* | | | | | | |

**Sunday 26 October 2014**

Dark shade: closed sessions (for members only)

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| **08:00-09.30** | **TWAS 25th General Meeting** *Ballroom A/B/C* |
| *09:30 -10:00* | *Refreshments* |
| **10:00-11:30** | **TWAS 25th General Meeting (cont.)** |
| *11:30-11:45* | *Participants and guests to be seated for Opening Ceremony Ballroom A/B/C* |

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| **11:45-13:30** | **Opening Ceremony and Presentation of Prizes, Medals  and Certificates**  **Chair: Chunli Bai** | |
|  | Opening Addresses | |
|  | Presentations of Prizes and Medals | |
|  | *TWAS-Lenovo Science Prize to:* *(To be announced)* | |
|  | *TWAS 2014 Medals to*:   * S. Al-Kindy * S-J. Chen * J. Lubchenco | |
|  | *TWAS 2013 prizes to*:   * Y. Zhu, *Agricultural Sciences* * S-D. Lin-Chao & G. Xu, *Biology* * A. Ajayaghosh & C-Y. Mou, *Chemistry* * X. Li, *Earth Sciences* * M. Al-Nimr & I. Manna, *Engineering Sciences* * M-H. Chang & T. Dalkara, *Medical Sciences* * R. Gopakumar & M. Pimenta, *Physics*   *TWAS Celso Furtado Prize to:* L. Zhang | |
|  | *C.N.R. Rao Prize to:* (To be announced) | |
|  | *Atta-ur-Rahman Prize to:* (To be announced) | |
|  | *TWAS Regional Prize to:* (To be announced) | |
| *13:30-14:30* | *Lunch Ballroom Terrace* | |
| **14:30-15:15** | **TWAS-Lenovo Science Prize** **Lecture** (To be announced) *Ballroom A/B/C*  **Chair: A. Sood** | |
| **15:15-16.50** | **Symposium 1: Ministerial Session** *Ballroom A/B/C**Building the Future: Cultivating and supporting young scientific talent*  **Chair: R. Al Busaidi**  **Co-Chair: Chunli Bai** | |
| 15:15-15:35 | H. Al Hinai, Secretary General, The Research Council, Oman | |
| 15:35-15:55 | M.C. Pereira Teixeira , Minister of Science and Technology, Angola | |
| 15:55-16:10 | A.M. Abbasov, Minister of Communications and High Technologies, Azerbaijan | |
| 16:10-16:30 | A. El-Beltagy Minister of Agriculture and Land Reclamation, Egypt | |
| 16:30-16:50 | K. VijayRaghavan Krishnaswamy, Secretary, Department of Science and Technology, India, (representing J. Singh, Minister for Science & Technology & Earth Sciences) | |
| *16:50-17:15* | *Refreshments* | |
| **17:15-18:35** | **Symposium 1: Ministerial Session (cont.)** *Building the Future: Cultivating and supporting young scientific talent* | |
| 17:15-17:35 | V.Z. Magwaza-Msibi, Deputy Minister of Science and Technology, South Africa (representing N. Pandor, Minister) | |
| 17:35-17:55 | G. Oliva, President, Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brazil (representing C. Campolina Diniz, Minister of State, Ministry of Science, Technology and Innovation) | |
| 17:55-18:15 | E. Micha Zaga, Deputy Director for Regional Development, CONACYT, Mexico (representing E. Cabrero Mendoza, Director General, CONACYT) | |
| 18:15-18:35 | Discussions | |
| **18:35-18:45** | **DST-TWAS Programme of Cooperation – Signing Ceremony** *Ballroom A/B/C* | |
| *18:45-19:00* | *Refreshments* | |
| **19:00-19:30** | **C.N.R. Rao Prize Lecture**  (To be announced)  **Chair: A. Cheetham**  *Ballroom A/B* | **TWAS-Celso Furtado Prize Lecture**  *Avoiding middle income trap through enhancing human capital: the case of China*  L. Zhang  **Chair: R. Hassan**  *Ballroom C* |
| *20:00* | *Dinner (transfer arranged) Albustan Palace Hotel* | |

**Monday, 27 October 2014**

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| **08:00-10:45** | **Symposium 2:** *Ballroom A/B/C* ***Light: Unifying Theme (International Year of Light 2015)***  **Convener: A. Sood** | |
| 08:00-08:05 | *Introduction by Convener, Ajay Sood* | |
| 08:05-08:45 | *Quantum technology for a networked world*  P. Knight | |
| 08:45-09:25 | *Laser spectroscopy applied to environmental, ecological and medical research*  S. Svanberg | |
| 09:25-10:05 | *Gas, glass and light: 20 years of photonic crystal fibres*  P. Russell | |
| 10:05-10:45 | Applications of laser spectroscopy to meet challenges in medicine  K. Svanberg | |
| *10:45-11:00* | *Refreshments* | |
| **11:00-13:00** | **Symposium 3:** *Ballroom A/B/C* ***Presentations of the Oman National Research Award Winners*** | |
|  | ***Winner of Research Led by PhD*** | |
| 11.00-11.10 | Winner of Energy and industry sector | |
| 11.12-11.22 | Winner of Information Systems and Communication Technologies sector | |
| 11.24-11.34 | Winner of Health and social services sector | |
| 11.36-11.46 | Winner of Education and human resources sector | |
| 11.48-11.58 | Winner of Culture, basic and social sciences sector | |
| 12.00-12.10 | Environmental and Biological Resources sector | |
|  | ***Winner of Research Led by Non-PhD*** | |
| 12.12-12.22 | Winner of Energy and industry sector | |
| 12.24-12.34 | Winner of Health and social services sector | |
| 12.36-12.46 | Winner of Education and human resources sector | |
| 12.48-12.58 | Environmental and Biological Resources sector | |
| *13.00–14.00* | *Lunch Ballroom Terrace* | |
| **14:00-17:30** | **Lectures by Awardees of TWAS 2013 Prizes**  Biological & Earth Sciences  **Chair: K. Mshigeni**  *Ballroom A/B* | **Lectures by Awardees of TWAS 2013 Prizes**  Physical Sciences  **Chair: J. Urrutia-Fucugauchi**  *Ballroom C* |
| 14:00-14:30 | *Arsenic in rice: A neglected threat to human health*  Y. Zhu, Agricultural Sciences | *π-Gelators: a new class of soft functional materials*  A. Ajayaghosh, Chemistry |
| 14:30-15:00 | *Functional roles, importance, and complexity of the RNA degradation machinery in bacteria*  S. Lin-Chao, Biology | *Mesoporous silica materials*  C-Y. Mou, Chemistry |
| 15:00-15:30 | *DNA oxidation regulates mammalian development and cell reprogramming*  G. Xu, Biology | *Novel systems in utilizing the renewable energy*  M. Al-Nimr, Engineering Sciences |
| 15:30-16:00 | *Cellular automata and agent-based models for land use simulation and planning for sustainable land development in China*  X. Li, Earth Sciences | *Development and characterization of new age hardenable amorphous matrix Al-alloys synthesized by mechanical alloying*  I. Manna, Engineering Sciences |
| 16:00-16:30 | *Liver cancer prevention – starting from fetal and neonatal period*  M-H. Chang, Medical Sciences | *Simplifying string theory*  R. Gopakumar, Physics |
| 16:30-17:00 | *Creating the conditions to do cutting-edge basic research for understanding brain disorders*  T. Dalkara, Medical Sciences | *Investigating the electronic and optical properties of graphene and carbon nanotubes by light scattering*  M. Pimenta, Physics |

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| *17:00-17:30* | *Refreshments* |
| **17:30-18:00** | **Lecture by Atta-ur-Rahman: *The Amazing World of Innovation*** *Ballroom A/B/C* |
| *18:00–18:15* | *Break* |
| **18:15-19:45** | **Induction of new TWAS Members and Young Affiliates** *Ballroom A/B/C* |
| *20:00* | *Dinner* |

**Tuesday, 28 October 2014**

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| **08:30-10:00** | **Medal 2014 Lectures** *Ballroom A/B/C*  **Chair: J. Palis** | | | |
| 08:30-09:00 | *Microfluid-chemiluminescence, an emerging technique for pharmaceutical and biological analysis*  S. Al-Kindy | | | |
| 09:00-09:30 | *Targeted therapy: the new lease on life for leukemia*  S-J. Chen | | | |
| 09:30-10:00 | *Delivering on science’s social contract*  J. Lubchenco | | | |
| **10:00-11:30** | **Invited Lectures** *Ballroom A/B/C*  **Chair: I. Eltayeb** | | | |
| 10.00-10.45 | *Grand challenges and solutions:  How innovation can help reach sustainable development goals and create the post-2015 world*  P.A. Singer | | | |
| 10:45-11:30 | *Cosmic Inflation, the Higgs Boson and the Future of Fundamental*  *Physics*  F. Quevedo | | | |
| *11:30-11:45* | *Refreshments* | | | |
| **11:45-12:30** | **Atta-ur-Rahman Prize Lecture:**  (To be announced)  **Chair: Song Gao**  *Ballroom A/B* | | **TWAS-ARO Prize Lecture:**  (To be announced)  **Chair: M. Najim**  *Ballroom C* | |
| *12:30-14:00* | *Lunch Ballroom Terrace* | | | |
| **14:00-16.00** | **Presentations by Young Affiliates**  Medical Sciences  **Chair: A. Daar**  *Ballroom A* | **Presentations by Young Affiliates**  Cell & Molecular Biology  **Chair: F. Barrantes**  *Ballroom B* | **Presentations by Young Affiliates**  Physics and Mathematics  **Chair: A. Kuku**  *Ballroom C* | **Presentations by Young Affiliates**  Chemistry and Earth Sciences  **Chair: S. Al Kindy**  *Majilis* |
| 14:00-14:15 | *Effects of elemental selenium nanoparticles delivered in liposome on oxidative stress and β-cell damage in streptozotocin-induced diabetic rats*  A.E. Abdel Moneim | *Establishing a new model of prostate cancer using prostate stem/progenitor cells*  W. Abou-Kheir | *Data protection using optical encryption and QR codes*  J.F.Barrera Ramirez | *Phenolipids: New Generation of Novel Antioxidants*  M.F.R. Hassanien |
| 14:15-14:30 | *Protection of disease/conditions induced memory impairment by novel pharmaceutical agents*  K.H. Alzoubi | *Molecular Target 7SK snRNA in the Drug Designing*  S.N. Khan | *Thermally-assisted-occupation density functional theory*  Jeng-Da Chai | *Astaxanthin: Challenges, Opportunities, and Its Global Market*  R.R. Ambati |
| 14:30-14:45 | *Traumatic Brain Injury Biomarkers: A Neuroproteomics Approach*  F.H. Kobaissy | *Dengue: apoptosis in tissues and apoptotic proteins in plasma of cases*  D. Limonta | *Classification of low dimensional solvable Leibniz algebras*  A.Khudoyberdiyev | *Use of Earth observation for the disaster risk reduction*  Fang Chen |
| 14:45-15:00 | *A randomised trial of artemisinin-naphthoquine and artemether-lumefantrine therapy in Papua New Guinean children with falciparum and vivax malaria*  M. Laman | *Conservation genetics for southern African marine environments: insights from molecular tools and implications for biodiversity planning in the region*  S. von der Heyden | *On the constants of the Bohnenblust-Hille and Hardy Littlewood inequalities*  D. Pellegrino | *Nanoelectronics and Nanomechanics with Graphene*  M.M. Deshmukh |
| 15:00-15:15 | *Malaria vectors species diversity and malaria transmission in Malindi district along the Kenya coast*  J.M. Mwangangi | *Understanding how the cells of our body recognize and kill threatening infectious parasites*  D. Zamboni | *Engineering the chromatic dispersion and confinement losses of microstructure optical fibers*  S.M. Abdur Razzak | *Stable carbon isotope analysis of the diets of West African bovids in Pendjari Biosphere Reserve (Northern Benin)*  C.A. Djagoun |
| 15:15-15:30 | *Infertility intervention: The baboon as preclinical model for assisted reproductive technology (ART)*  A. Nyachieo | *Coumarins synthesis and applications: review*  A. Al-Amiery, **CHEMISTRY** | *The formation of the supermassive stars our the Galaxy*  L.A. Zapata | *Understanding the effect of selenium on structure–property relationship of donor-acceptor π-conjugated functional materials*  S.A. Patil |
| 15:30-15:45 | *Automatic interaction among magnitude information in numbers, space, time, and action*  D.H. Wu |  | *Strategies for Climate-smart Rice Production*  M. Farooq**, CHEMISTRY** | *Nano-Pores and Supramolecular Chemistry*  M.R. Shah |
| 15:45-16:00 | *Treatment of Cutaneous Leishmaniasis - Nature’s remedy based on* Physalis minima  S. Yousuf |  | *Photostability of Poly (vinyl chloride) -Still on the run*  E. Yousif**, CHEMISTRY** | *Novel Organic Derivatives of Barbituric and Meldrum’s Acids*  K.Sweidan |
| *16:00-16:30* | *Refreshments* | | | |
| **16:30-17:30** | **Distribution of National Research Awards (TRC)** *Ballroom A/B/C* | | | |
| 16:30-16:45 | Presentation by Dr. Saif AlHiddabi about the National Research Award | | | |
| 16:45-17:00 | Announcing Winners of FURAP program | | | |
| 17:00-17:15 | Announcing Winners of Researches Led by PhD | | | |
| 17:15-17:30 | Announcing Winners of Researches Led by Non-PhD | | | |
| **17.30-19:10** | **Presentations of completed projects funded by TRC in all six research sectors** | | | |
| 17:30-17:35 | Presentation of completed projects in Energy and industry sector | | | |
| 17:37-17:42 | Presentation of completed projects in Information Systems and Communication Technologies sector | | | |
| 17:44-17:49 | Presentation of completed projects in Health and social services sector | | | |
| 17:51-17:56 | Presentation of completed projects in Education and human resources sector | | | |
| 17:58-18:03 | Presentation of completed projects in Culture, basic and social sciences sector | | | |
| 18:05-18:10 | Presentation of completed projects in Health and social services sector | | | |
| 18:12-18:17 | Presentation of completed projects in Health and social services sector | | | |
| 18:19-18:24 | Presentation of completed projects in Information Systems and Communication Technologies sector | | | |
| 18:26-18:31 | Presentation of completed projects in Education and human resources sector | | | |
| 18:33-18:38 | Presentation of completed projects in Culture, basic and social sciences sector | | | |
| 18:40-18:45 | Presentation of completed projects in Health and social services sector | | | |
| 18:47-18:52 | Presentation of completed projects in Health and social services sector | | | |
| 18:54-19:01 | Presentation of completed projects in Health and social services sector | | | |
| **19:15-19:45** | **Closing Ceremony** *Ballroom A/B/C* | | | |
| *20:00* | *Dinner* | | | |

**Wednesday, 29 October 2014**

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| **Excursions** | **Details available upon arrival** |