

WELCOME TO THIS SPECIAL CONFERENCE EDITION OF THE TWAS NEWSLETTER.

Every three years, in conjunction with the annual General Meeting of its members, TWAS convenes a General Conference in a developing country to review the status and future prospects of science and technology in the South. TWAS members, ministers of science and technology, presidents of science academies and research councils as well as representatives of international organizations from the South and the North are invited to attend.

This year's 12th General Conference and 23rd General Meeting took place in Tianjin, China, very generously hosted by the Chinese Academy of Sciences and the Tianjin Municipal People's Government. More than 400 scientists from 40 countries, mainly TWAS members from

TWAS in China

developing countries, attended the event. The theme was 'Science and Sustainability'.

We were deeply honoured that the President of the People's Republic of China, Hu Jintao, travelled specially to Tianjin to present a half-hour speech to the members in a closed session in Tianjin's Great Hall. He spoke on the importance of his government's ongoing relationship with TWAS and commitment to supporting scientific research in developing countries. He then dedicated his time to congratulating each of the prize winners. This honour was greatly appreciated by all present.

The Academy's business meetings had taken place the day before, on 17 September. The new TWAS council, new TWAS members and new prize winners were elected and subsequently endorsed by TWAS members present during the General Meeting on 18 September, with General Conference presentations and lectures continuing until 21 September.

CONTENTS	2	TWAS IN CHINA	5	TWAS MEETS IN TIANJIN	16	ERNESTO
ILLY TRIESTE SCIENCE PRIZE	22	HONOURING SOCIAL SCIENCE	26	TAKING CARE		
OF EYES AND EARS	32	BUILDING AN INNOVATIVE COUNTRY	36	SMALL		
COUNTRY: BIG AMBITIONS	41	CAUTIOUSLY OPTIMISTIC	46	PHOTOVOLTAICS IN		
CHINA	50	PEOPLE, PLACES, EVENTS				

TWAS NEWSLETTER
Published quarterly
with the support of the
Kuwait Foundation for the
Advancement of Sciences (KFAS)
by TWAS, the academy of sciences for
the developing world
ICTP Campus, Strada Costiera 11
34151 Trieste, Italy
tel: +39 040 2240327
fax: +39 040 224559
e-mail: info@twas.org
website: www.twas.org

TWAS COUNCIL

President
Jacob Palis

Immediate Past President
C.N.R. Rao

Vice-Presidents
Keto E. Mshigeni
Fayzah M.A. AL-Kharafi
Atta-ur-Rahman
Bai Chunli
Francisco J. Barrantes

Secretary General
D. Balasubramanian

Treasurer
Mohamed H.A. Hassan

Council Members
Robin Crewe
Adel E.T. El-Beltagy
Reza Mansouri
Abdul H. Zakri
Harold Ramkissoon

TWAS EXECUTIVE DIRECTOR
Romain Murenzi

EDITORS
Tonya Blowers
Peter McGrath

MANAGING EDITOR
Gisela Isten

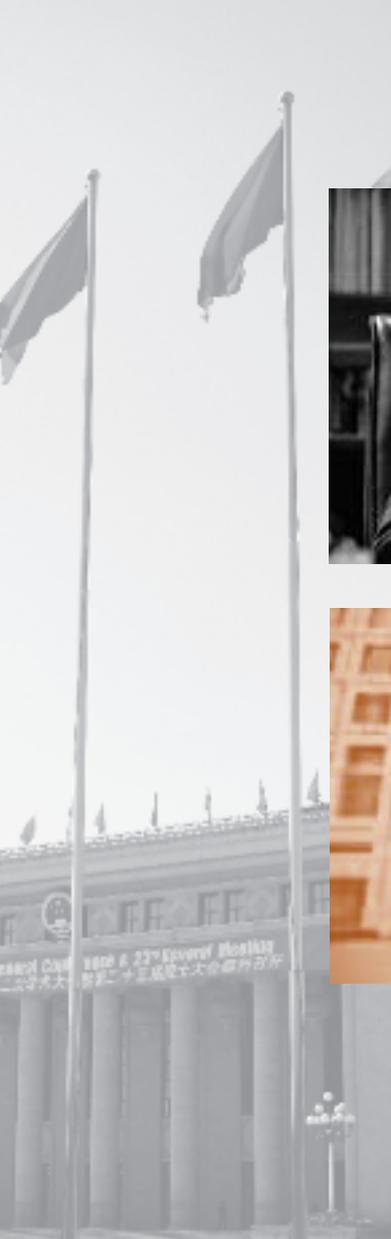
ASSISTANT EDITORS
Cristina Serra

DESIGN & ART DIRECTION
Sandra Zorzetti, Rado Jagodic
www.studio-link.it

PRINTING
Stella Arti Grafiche, Trieste

Cover image:
Foto TWAS

*Unless otherwise indicated,
the text is written by the editors
and may be reproduced freely
with due credit to the source.*



TWAS ELECTS A NEW PRESIDENT

Very important this year was the election of a new TWAS president, Chunli Bai, from China. Incumbents hold the position for three years, and can be re-elected for a second term. Jacob Palis, former director of the Instituto Nacional de Matemática Pura e Aplicada (IMPA) in Rio de Janeiro and president of the Brazilian Academy of Sciences, has served two full terms for TWAS, from 2007-2012. I have had the great honour and pleasure of working with Jacob Palis for my first year-and-a-half in office. He is an indefatigable champion of TWAS and has done a great deal to ensure that our activities are known and respected throughout the developing world and beyond. He has also made an important contribution to our fundraising efforts. Above all, he has been an expert advisor and supportive colleague. I really wish to thank him and I know that he will continue to play an active role at TWAS, replacing C.N.R. Rao (who likewise has made immeasurable contributions to TWAS over many years) as immediate past president.

TWAS Newsletter, Vol. 24 No. 2, 2012

I am delighted that TWAS members unanimously supported the election of our new president. Chunli Bai's credentials for the post could not be better: he has served as TWAS vice-president for the past six years, is currently the president of the Chinese Academy of Sciences (CAS) and is an internationally respected scientist in the field of nanotechnology research, spanning the fields of both chemistry and physics. Judging from the very smooth running and organization of our conference this year, Bai is also a formidable administrator and manager. I am excited at the prospect of working closely with him over the coming years, and continuing to strengthen our relationship with China, whose recent and rapid advancements in science and technology, coupled with the conversion of research ideas into patents and marketable products, have transformed China into a booming economy and a key player on the world stage. Chinese researchers, policymakers and business representatives clearly have a great deal of experience and expertise to offer developing and emerging countries, while developing countries represent new and receptive markets for China. It will be TWAS's privilege to provide networks and opportunities to encourage such mutually beneficial exchanges.

Meanwhile, we thank other long-standing and influential members of our council: TWAS vice-president Atta-ur-Rahman, president of the Pakistan Academy of Sciences and former coordinator general of COMSTECH, who this year has donated an annual prize in chemistry to be administered by TWAS; and Dorairajan Balasubramanian, president of the Indian Academy of Sciences, who has been a particularly active and committed TWAS secretary general.



We are grateful too, to the contributions from outgoing council members Reza Mansouri from Iran and Abdul Zakri from Malaysia.

The incoming secretary general will be Ajay Kumar Sood, also from India, a physicist and TWAS Fellow since 2001. We welcome two new vice-presidents: for East and South-East Asia, Yongyuth Yuthavong, a molecular biologist from Thailand (TWAS Fellow 1991); and for Central and South Asia, Rabia Hussain, a microbiologist from Pakistan (TWAS Fellow 2003). Hussain is the second woman to have been elected vice-president, joining Fayzah Al-Kharafi from Kuwait, who represents the Arab Region.

Habib Firouzabadi, a chemist at Shiraz University in Iran (TWAS Fellow 2000) and Farida Shah, a biologist from Malaysia (TWAS Fellow 2002) also take their places as new Council members. Shah is vice-president of TWAS's partner organization, the Organization for Women in Science for the Developing World (OWSD), and I am sure that her keen interest in women's participation in scientific research will ensure that the council has a balanced and inclusive gender perspective. This year saw important and necessary increases of women's representation in both the Council and membership, and this is a trend that TWAS is actively encouraging.

In addition, as director of the Abdus Salam International Centre for Theoretical Physics (ICTP), it is particularly important and fitting to have Fernando Quevedo, a physicist from Guatemala and TWAS Fellow since 2010, represented on the Council. As many of you who have visited us here in northern Italy know, ICTP has hosted our headquarters on its campus in Trieste for the past thirty years. The ex-officio position on the Council for its director is a measure of how highly we value ICTP's past and continued collaboration and support.

I am certain that with the continued support and goodwill of our outgoing council members, and the renewed energy and diverse perspectives that the new members will most certainly bring, TWAS will continue to be a highly respected world academy, able to adapt to global changes – be they environmental, political or economic.

I look forward to working with the Council, our membership and our partners to continue to ensure that motivated and committed scientists, especially in the poorest and least connected countries in the South, have access to the resources they need to carry out excellent research. ■

◆◆◆ **Romain Murenzi**
TWAS Executive Director

