This bulletin tells the stories of just a few of the many talented women from around the world who, with support from the Schlumberger Foundation Faculty for the Future program, have recently completed their PhD or post-doctoral studies at distinguished universities worldwide.
Launched in 2004, the Faculty for the Future program awards fellowships to women from developing and emerging economies to pursue PhD or post-doctoral studies in engineering, technology, and the physical sciences at distinguished universities outside their home countries.

The long-term goal of the program is to generate conditions that result in more women pursuing academic careers in scientific disciplines, thus contributing to the socio-economic development of their home countries and regions.

The Faculty for the Future program is growing each year and has become a powerful community of 405 women scientists and engineers from 68 countries.

Grant recipients are selected as much for their leadership capabilities as for their scientific talents. Ultimately, they are expected to return to their home countries to continue their academic careers, further their research, teach, and become inspirational role models for other young women.

Grants are based on actual costs up to a maximum of USD 50,000 per year, and may be renewed through to completion of studies subject to performance, self-evaluation, and recommendations from supervisors.

In the following pages, you will find the stories of thirteen women who have obtained their PhDs or completed post-doctoral studies at various host universities during 2013 and early 2014 with the support of Faculty for the Future grants. Some have already returned to their home countries, armed with their new knowledge and skills, and determined to make a difference in the lives of others and the future of society. Some have not yet returned home, but in the meantime are making a difference in their own unique ways. The Schlumberger Foundation looks forward to seeing what they will accomplish in the future.
Modinah ABDUL RAHEEM, from Nigeria, completed her Post-Doctorate in Atmospheric Chemistry at the University of Birmingham, United Kingdom.

Modinah was born in Ibadan, the third largest metropolitan area in Nigeria, and is married with three children. Her parents are a retired civil servant and a businesswoman, and she has five sisters and two brothers. Modinah has a BSc in Chemistry, an MSc in Physical Chemistry, and a Post-Graduate Diploma in Education (PGDE), all from the University of Ibadan, Nigeria. In 2007 she completed a PhD in Chemistry, with a focus on physical and environmental chemistry, at the University of Ilorin, Nigeria, where she has been a lecturer since 2006.

Modinah has published papers in international journals and is a member of several professional organizations including the United Kingdom's Royal Society of Chemistry, Institute of Chartered Chemists of Nigeria, Chemical Society of Nigeria, and International Society for Environmental Geotechnology. She was a leader of a waste-sector professional group that contributed to the 2nd Nigeria National Communication by the Special Climate Change Unit of the Nigerian, Federal Ministry of Environment.

Her post-doctoral research was done mainly at the School of Geography, Earth and Environmental Sciences, University of Birmingham, United Kingdom between July 2012 and July 2013. The work primarily involved the modeling of atmospheric pollutants with a focus on some less-studied Biogenic Volatile Organic Compounds (BVOCs); particularly methyl chavicol (MC), also known as Estragole, which is suspected to be carcinogenic. MC has been identified as a major BVOC resulting from palm oil cultivation, and emissions are expected to rise in developing countries such as Nigeria due to increasing demand for food and biofuels. Modinah's experimental work was initially performed at the EUPHORE facility in Spain and continued with modelling work in Birmingham. Some of the results from her research group are being prepared for publication.

After her post-doctoral studies, Modinah resumed teaching and researching as a Senior Lecturer at the University of Ilorin, Nigeria, and she is currently also a visiting academic with the University of Birmingham.

SIGNIFICANT PUBLICATIONS:

Modinah ABDUL RAHEEM received a Faculty for the Future grant for the academic year 2012.

Date of graduation: July 2013.
OVA CANDRA DEWI

PhD in Environmental Engineering

Ova CANDRA DEWI, from Indonesia, obtained her PhD in Environmental Engineering (Dr.-Ing.), majoring in Waste Management, from Hamburg University of Technology and Freie University Berlin, Germany.

Ova is 34 years old and is a wife and mother of two children. During the last ten years, she has achieved several milestones during her career in professional and academic life within both national and international working environments.

During her time at the University of Indonesia (2000-2004), she led several community-oriented research projects in remote areas of the country such as North Sumatera, East Nusa Tenggara and South Sulawesi. In 2004 she became a member for Tsunami relief in Aceh. She was the main coordinator for a German-Indonesian Conference on Climate Change held in Hamburg, Germany, in 2010. Ova has worked in several research institutions and waste-related companies in Germany and Japan.

While funded by the Faculty for the Future program, Ova was a project leader in development of a decision support model on waste management towards low carbon emissions, focusing on densely-populated urban areas in Jakarta, Indonesia. This project assisted housewives from low-income communities and empowered them to better manage with household waste at its source of generation.

After completion of her PhD, Ova returned to Indonesia where she is currently a lecturer at the Islamic University of Indonesia, Yogyakarta. She is also a We-pro-Waste Program Coordinator at Borda Indonesia-Network/Rural Technology Development Institute (LPTP), Yogyakarta. Her immediate plan is to continue to work as a faculty member and to join a non-governmental organization (NGO) that will help her continue to share her knowledge with the mid-to-low income community, especially women from densely populated urban settlements.

SIGNIFICANT PUBLICATIONS:


Candra Dewi, O., Gamal, A., de Aquino, P. and Koerner, I. [2011] Introduction to Sustainable Production at the Household Level: A Participatory Approach. 12th International Conference Quality in Research, Bali 4-7 July 2011, Conference Proceeding, ISSN: 114-1284
Sharanya Arcot DESAI obtained her PhD in Biomedical Engineering from Georgia Institute of Technology, Atlanta, United States.

Sharanya Arcot DESAI was born and raised in South India. She is passionate about research related to medical devices. After gaining a BSc in Electrical and Electronic Engineering and an MSc in Biological Sciences at the Birla Institute of Technology and Science, Pilani, India, she joined the PhD program in Biomedical Engineering at the Georgia Institute of Technology (Georgia Tech) in 2008. She completed her PhD, specializing in bioengineering, in a little over 5 years, which was achieved thanks to the support of the Faculty for the Future grant. During her PhD, Sharanya was selected for a seven month internship at a medical technology company. Additionally, she was selected to receive the Petit Student Mentor Award by the Parker H. Petit Institute for Bioengineering and Bioscience at Georgia Tech. She also served as a mentor for several undergraduate and graduate students.

Sharanya is currently working as a research scientist for a company based in California, that was founded to design, develop, manufacture and market implantable devices for the treatment of neurological disorders by responsive brain stimulation. The company's initial focus is the treatment of epilepsy, a debilitating neurological disorder affecting approximately 1% of the population worldwide.

Sharanya has been offered a post-doctoral position with the esteemed Tata Institute of Fundamental Research (TIIFR) in Bangalore, India, and plans to move there, along with her husband. Her long term plan is to head a biomedical engineering department at one of the top Indian universities with close ties to universities in the United States.

**SIGNIFICANT PUBLICATIONS:**


Nazli DONMEZER, from Turkey, obtained her PhD in Mechanical Engineering from Georgia Institute of Technology, Atlanta, United States.

Nazli was born and raised in Ankara, Turkey. She became interested in science and teaching while at high school. In 2007 she gained a BSc in Science from Middle East Technical University, Ankara. She then studied towards an MSc in Mechanical Engineering with a specialization in thermo-fluid sciences, especially spectrally selective heating of nanosized particles using radiative heat transfer. She received her MSc in July 2009 and then started working toward a PhD at Georgia Institute of Technology (GT).

Nazli’s research focused on thermal issues related to gallium nitride electronic devices. Interest in high-power, high-frequency transistor technologies is growing in the telecommunication sector, and thermal issues resulting from the high power loads applied to these devices is a major obstacle to engineering better solutions. Nazli’s goal was to understand problems such as hot spots associated with these devices by using experimental techniques, and to work on heat transfer models capable of explaining heat transfer at a broad range of scales.

Nazli is attracted to the thermal engineering of electronic devices as she considers it a cutting-edge subject with a strong interdisciplinary nature; a research area that binds electronics, mechanical engineering and physics. She feels that many disciplines can benefit from knowledge gained by another, and that in the future, scientists and engineers seeking solutions to technological problems must be open to interdisciplinary perspectives.

While at GT, Nazli organized seminars at her home university in Turkey about her research topic and the life of a PhD student in the US. She also helped Turkish students in their applications to graduate schools in the US. In addition, she helped her faculty at GT in their efforts to recruit Turkish students.

Nazli is currently a part-time instructor at GT.

SIGNIFICANT PUBLICATIONS:


JEANNE THERESE HILARIO ANDRES

PhD in Chemical Engineering

Jeanne Therese Hilario ANDRES, from the Philippines, obtained her PhD in Chemical Engineering from the University of Cambridge, United Kingdom.

Jeanne Therese is a Filipino chemical engineer who has worked as a university faculty instructor and research assistant, as well as a youth worker, trainer, singer, writer, editor and environmental educator. A Rector’s Award for Academic Excellence from the University of Santo Tomas, Manila, Philippines, provided a five-year undergraduate scholarship that helped her to achieve a BSc in Chemical Engineering (magna cum laude), ranking first of 59 graduates. She then worked towards an MSc in Environmental Studies at Miriam College, Quezon City, Philippines, supported by a two-year scholarship from its Fr. Miguel Varela Development Fund.

In her PhD research in Cambridge, Jeanne Therese sought to study, predict and model the effects of carbon dioxide capture and storage (CCS), a climate change mitigation technology that injects waste CO2 from industrial sources into depleted oil and gas fields or other deep geological formations. She developed a mathematical model to simulate and help understand the long-term fate of CO2 injected into saline aquifers. She also supervised chemical engineering students in conducting CCS-related research projects, and designed and performed experiments to validate her simulation results and extend knowledge of subsurface fluid behavior in porous media.

Jeanne Therese is the deputy editor for several high-impact peer-reviewed journals published by the Royal Society of Chemistry, an international not-for-profit organization that promotes excellence in the chemical sciences and provides educational outreach to encourage science careers among young people. In this influential role within science publishing, she hopes to encourage aspiring female researchers and increase the profile and visibility of scientific output from developing economies.

SIGNIFICANT PUBLICATIONS:
WITRI WAHYU LESTARI

PhD in Science

Witri Wahyu LESTARI, from Indonesia, obtained her Doctoral Degree in Science (Dr. rer. nat), majoring in Organometallic and Coordination Chemistry, from Leipzig University, Germany.

Witri Wahyu LESTARI, from Indonesia, obtained her Doctoral Degree (Dr. rer. nat), majoring in Organometallic and Coordination Chemistry, from Leipzig University, Germany.

Witri spent her childhood in a small village in Indonesia and became interested in chemistry at a young age, achieving the highest exam score in her district for the subject at senior high school. She gained a BSc in Chemistry with the grade cum laude at Sebelas Maret University, Surakarta, Indonesia, where she became a junior lecturer.

Witri was accepted for a German Academic Exchange Service (DAAD) scholarship to pursue an MSc at Leipzig University, where she later received a PhD with the grade magna cum laude. Her research work focused on chiral metal-organic frameworks and chiral coordination polymers.

In 2012, Witri supported the signature of a memorandum of understanding between Leipzig University and Sebelas Maret University focused on student exchange, research collaboration, and inviting experts from Germany. Collaboration is also planned with the Institute of Inorganic Chemistry, Siegen University, Germany.

In 2013, Syntheses, structures and luminescence properties of novel metal-organic frameworks based on zinc(II), cadmium(II) or lead(II) and a 2,2'-dimethoxy-functionalised biphenyl linker were published in CrystEngComm.

Witri will soon return to Indonesia to continue her career at Sebelas Maret University. “To be a professional lecturer in a developing country such as Indonesia is challenging,” she says. “It will need a lot of effort to attract research funding and keep up-to-date with scientific knowledge.

A new graduate school for chemistry is planned for Sebelas Maret University and Witri expects to be actively involved in this process. “With science we can positively change the world. Transferring scientific knowledge to our students will make a significant impact to help create a well-developed future for the next generation.”

SIGNIFICANT PUBLICATIONS:


SIDROTUN NAIM

PhD in Fisheries and Microbiology

Sidrotun NAIM, from Indonesia, obtained her PhD in Fisheries and Microbiology from the University of Arizona, United States.

Sidrotun divides her time between Indonesia and the United States. She is currently working as the Director of the Sustainable Aquaculture and Pathology Studies (AquaPath) Research Center at Surya University, Indonesia, and is also a Research Scientist at Harvard Medical School.

To prepare herself for future leadership roles, Sidrotun has been an active participant in public policy and leadership programs at Harvard. She believes that scientific innovation and public policy will make a real difference to support socio-economic development in any country.

To support her aim to be a good role model, Sidrotun has worked with other academics, government, and the media to inspire young generations into science and engineering. “Science is a slow business that takes time and courage,” she says. “The competition is tough. Many women scientists have decided to quit for several reasons, but, if I gave up too easily after all the stages that I've been through, it would be hard for me to make younger generations understand that being a scientist is good for the betterment of the world.”

SIGNIFICANT PUBLICATIONS


DADE NURJANAH

PhD in Computer Science

Dade NURJANAH, from Indonesia, obtained her PhD in Computer Science from the University of Southampton, United Kingdom.

Dade was born in Bandung, West Java, Indonesia and was raised in a family that valued the importance of education. Her parents taught her, along with her two brothers and sister, that education is a way of making life worthwhile.

After graduating from the Institute of Technology, Bandung, with undergraduate and graduate degrees in Informatics, Dade began teaching at Telkom Institute of Technology in Bandung. In 2008 she began her PhD in Computer Science at the University of Southampton. Her research focused on adaptive educational hypermedia, social semantic web technology, and computer-supported collaborative work. Dade proposed a new collaborative authoring model to develop learning resources for adaptive personalized learning systems. This advanced model helps practice communities, teachers, and the general public to work collaboratively to create learning resources. Since many people with various backgrounds contribute to the authoring process, the quality of learning objects is improved. Moreover, as the proposed model encourages authors to continuously update learning objects, the objects will always evolve, thus keeping them relevant to students' needs. Dade believes that her PhD research was important for disseminating knowledge, improving learning quality and diminishing knowledge gaps in society.

Dade returned to Indonesia on completion of her PhD and is currently the functional research manager at the Faculty of Technics, Telkom University. She also holds the chair of the 2nd International Conference on ICT, which is supported by the Institute of Electrical and Electronics Engineers (IEEE) and will be held in Bandung in May 2014.

“Doing my PhD has provided me many opportunities to attend conferences, workshops, schools and internships. These included a doctoral mobility program that, in 2010, enabled me attend Leibniz Universität, Hannover, Germany. At the end of the program, I was selected as the best participant and awarded the Excellence Award.”

SIGNIFICANT PUBLICATIONS:


OLUWABUKOLA OKE

PhD in Electrical and Electronic Engineering

Oluwabukola OKE, from Nigeria, obtained her PhD in Electrical and Electronic Engineering, majoring in Power System Analysis, from the University of Nottingham, United Kingdom.

Oluwabukola was born in south western Nigeria as the youngest child in a family of seven. As a child, she enjoyed mathematics, which spurred her into a career in electrical and electronic engineering.

She received a first class BSc degree in Electrical and Electronic Engineering at the University of Ado-Ekiti, Nigeria, and was named the best graduating student in the Faculty of Engineering. Despite an initial interest in the then booming telecommunications sector, a passion to help address crippling challenges in Nigeria’s power sector motivated her to specialize in that area.

Oluwabukola secured a Developing Solutions Scholarship from the University of Nottingham, United Kingdom, where in 2009 she completed an MSc with distinction in Electrical Technology for Sustainable and Renewable Energy. She then started her PhD with partial funding through a Nottingham University Tower Innovation Scholarship before securing the Faculty for the Future in 2010. She completed her PhD in 2013 with seven publications. She continues to maintain close links with her research group at Nottingham and to provide advice on statistical modelling.

Oluwabukola is currently working for an energy company in the United Kingdom. She believes that this will help her to better understand the needs of the power industry and enhance the quality of her research and teaching when she returns to academia. She is also involved in motivating young people, and writes a monthly newsletter called “Courage” targeted towards high school students as a pilot project in her home state in Nigeria.

SIGNIFICANT PUBLICATIONS:


BETTY PURWANDARI

PhD in Computer Science

Betty PURWANDARI, from Indonesia, obtained her PhD in Computer Science, majoring in Web Science, from the University of Southampton, United Kingdom.

Betty was born in Bandung, West Java, Indonesia. She is married to an industrial mechanical engineer. They have a teenage son and a teenage daughter. Her family has been supportive of Betty's passion in education and research.

After earning a BSc in Computer Science at the University of Indonesia, Betty obtained an MSc in Data Communications Networks and Distributed Systems at University College London, United Kingdom, supported by a UK Government Chevening Scholarship.

Betty gained her PhD in Computer Science at the School of Electronics and Computer Science at the University of Southampton, United Kingdom. She developed a model of mobile web uptake in emerging economies, and her research helps understand the impressive growth in Internet access from mobile phones and its impact in the developing world, where more than 80 percent of the world's population live.

After completing her PhD, Betty returned to her position as an academic staff and researcher in the Faculty of Computer Science at the University of Indonesia, where she was recently appointed as vice-coordinator for the information systems undergraduate and postgraduate programs. Her supervisors at the University of Southampton, Professor Dame Wendy Hall and Dr. Garry Wills, have worked together with Betty to establish a memorandum of understanding (MoU) between the University of Indonesia and the University of Southampton. The MoU has been signed and the research collaborations are being set up.

SIGNIFICANT PUBLICATIONS:


Betty PURWANDARI received a Faculty for the Future grant for the academic years 2009, 2010 & 2011.

Date of graduation: October 2013.
MARIAN DORCAS QUAIN

Post-Doctoral Fellowship in Biotechnology

Marian Dorcas QUAIN, from Ghana, completed a Post-Doctoral Fellowship in Biotechnology at the University of Leeds, United Kingdom.

Marian completed her PhD in Ghana in 2007, having done some of her work with a research group at Tuskegee University, Alabama, United States. With support from the Faculty for the Future, she was a post-doctoral research fellow at the University of Leeds, United Kingdom from September 2011 to August 2013. Her research characterized transgenic soybeans to verify the effects of drought on plants. Molecular and phenotypic markers for the detection of traits associated with the introduced gene's effects on growth and development of soybean plants were selected. Particular attention was paid to cysteine proteases and cysteine protease inhibitors (cystatins) and the changes that occur in these proteins during natural and drought induced senescence.

Marian had been a research scientist at the CSIR-Crops Research Institute, Kumasi, Ghana, and at the end of the fellowship she returned to her previous job and was promoted to Senior Research Scientist. In December 2013, as part of the National Farmers Day celebration in Ghana, she was nominated for, and was subsequently given, the country’s National Best Researcher Award. Her stated research area was the utilization of tissue culture methods to produce high quality clean planting materials for farmers, with the aim of reducing disease pressure on the field which ultimately affect post-harvest yields, as well as increase productivity.

Prior to her return to Ghana, Marian applied for funds from the American Society of Plant Biologists, of which she is a member. The application, made together with researchers from Tuskegee University, was successful, and led to her running a project titled “Introducing Basic Biotech Teaching Techniques in High Schools in Sub-Saharan Africa”. The project seeks to introduce modern biotechnology in a relevant way to teachers and students. It will also set a platform to integrate teachers and students into existing biotechnology awareness creation initiatives in Ghana.

SIGNIFICANT PUBLICATIONS


MARÍA ISABEL ROCHA GASO

PhD in Electronic Engineering and Bioelectronics

María Isabel ROCHA GASO, from Mexico, obtained her PhD in Electronic Engineering and Bioelectronics from the Polytechnic University of Valencia, Spain, and the Catholic University of Louvain, Belgium.

María was born in Mexico City, Mexico. She received a Computer Engineering degree from the National Autonomous University of Mexico in 2006. She then attended the Polytechnic University of Valencia (UPV), Spain, where in 2008 she received a Bioelectronics Engineering specialization degree. In 2011, she completed a one-year research stay at the Catholic University of Louvain (UCL), Belgium, where she worked in a cleanroom environment performing microfabrication processes. During her research stay at UPV and UCL, she established a PhD joint supervision agreement.

María was granted her PhD degree (cum laude) by UPV and UCL in October 2013. The thesis was related to surface acoustic wave sensors for biosensing applications. Her current research interests include bioelectronics, biosensors, acoustic wave sensors, microfabrication, piezoelectric transducers and applications.

Since November 2012, María has worked for a wave sensor company based in Spain. Her future plans include establishing a research collaboration project with a Mexican university and obtaining a teaching and research position in Mexico.

SIGNIFICANT PUBLICATIONS:


SITHABILE TIRIVAROMBO

PhD in Water Resource Science

Sithabile TIRIVAROMBO, from Zimbabwe, obtained her PhD in Water Resource Science from Rhodes University, South Africa.

Sithabile was born, raised, and attended secondary school in Gweru, Zimbabwe. She did her advanced level education in Bulawayo, Zimbabwe. After obtaining a BSc in Chemistry at the University of Zimbabwe in 1994, she became a teaching assistant in the University's chemistry department and in 2000 received an MSc in Water Resources Engineering and Management. In 2003, she joined Chinhoyi University of Technology, Zimbabwe, where she founded its Department of Environmental Sciences and Technology and was instrumental in the development of bachelor's degree courses. During her stay at Chinhoyi, Sithabile was instrumental in the formulation of most of the policies for this young and upcoming university, and played an effective role in its Senate Executive and other committees.

In 2008, Sithabile joined the Ethiopian Civil Service College, Addis Ababa, where she lectured in its Urban Management and Planning master's degree program. In 2009, she began doctoral studies at the Institute for Water Research at Rhodes University, South Africa.

Sithabile's research included modeling climate change impacts on water resources in the Zambezi River basin. She tried to gain a better understanding of the interaction between climate and hydrologic systems through a comprehensive assessment of the vulnerability of water resources to a changing climate. The impact on food security in the basin was also assessed. The broader aim of her study was to formulate new hydrologic estimates to better inform management practices and thus produce timely and appropriate adaptation strategies. Soon after her graduation in 2013 she received an award to be a visiting scholar at Duke University, North Carolina, United States. While there, she had an enriching professional experience with faculty of the Nicholas School of Environment and some professors at Princeton University.

Botswana International University of Science and Technology recently invited Sithabile to join its staff in its Department of Earth and Environmental Sciences. After this assignment she will go back to her home university in Zimbabwe where she looks forward to adding to the country's scientific knowledge base and hopes to inspire other females to pursue scientific careers.

SIGNIFICANT PUBLICATIONS:
