



ArabWAYS

Arab World Association of Young Scientists

The first platform for young researchers in the Arab World

July 2013

Issue 1

ArabWAYS Insight

Preface

On behalf of Arab World Association of Young Scientists (ArabWAYS), we proudly launch our newsletter which provides a short view on: what is ArabWAYS, what is its approach, who are the partners and in which disciplines and fields we are taking actions. All these questions will be answered in the first issue of this newsletter through a brief description of the work that has been done since 2011. This issue will also report some of the most important meetings and conferences (goals and outcomes), ongoing projects and collaborations, and finally some of our outstanding members' publications and innovations.

We are looking to publish the newsletter quarterly to cover different topics and activities. We will bring to our readers and members some of the latest news on upcoming events, publications, scholarships and funding in different disciplines; and last but not least, the newsletter will include a Reading Corner with review of most important book and papers.

We hope that this newsletter will contribute in enhancing the growing success of young Arab scientists and researchers' activities and we look forward to continuing our collaboration with our partners. To reach that goal, we are looking forward to your ideas, suggestions or general feedback.

With our best regards,
ArabWAYS Board Team



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How can we strengthen and boost research and development to meet Arab societies' aspirations?

Unlike developed countries, the Arab countries are still far away from setting high national priorities on research and development (R&D), to help out relieving the enormous social, educational and economic issues and burdens. Indeed, and according to the World Bank (2009*), expenditure for research & development is negligible in Arab countries, mostly below 0.5% of GDP in the past five years. Whereas the national expenditure of some countries like the United States has reached 2.7%, UK 1.8%, and Germany 2.6%. Furthermore, the lack of strategic planning and coherent integrated policies to enhance science and technology have engendered a massive Arab brain drain toward developed countries.

It failed in integrating scientific researchers in an efficient and productive environment. This problem is not new, but it has been rapidly aggravated within the current socio-political changes engendered during the Arab Spring.

Therefore, there is an urgent need to target properly decision makers at political level to allocate to the universities and research institutions further strategic financial assets, to boost collaboration and networking among researchers, and to provide them with up-to-date capacity building programs. Along with the policy responses, researchers should not keep their heads in the sand. Consolidating the pillars of knowledge society requires

bottom-up efforts from researchers as well to embracing this goal and leading the way.

Hence, many initiatives have been recently launched and implanted in the Arab World to face these issues by building -up networks, sharing experiences and knowledge, and making pressure on decision makers to give further attention for meeting the needs of R&D. In this regards, ArabWAYS is willing to play a crucial role at mobilizing Arab young scientists and researchers to establish and promote the best tools and practices for the well-being of Arab societies.

* <http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS>

Towards Knowledge Societies: ArabWAYS 's Contribution

ArabWAYS is a legal entity registered as a scientific community (ArabWAYS C.I.C) since summer 2012, but it has been highly dynamic since 2010 through its participations in regional and international scientific and research forums, as well as its virtual platform on Facebook. The main objective is to contribute significantly in strengthening the capacities of young Arab researchers to conduct relevant and high quality research as well as spread a science culture in the Arab societies.

Missions

The missions of ArabWAYS are focused on, but are not limited to, the following:

- Identify and address major issues of importance to science and Arab societies
- Facilitate interaction amongst young scientists across all fields and from all Arab countries.
- Promote the participation of young scientists especially those poorly represented i.e. women researchers.

- Provide independent, authoritative approach to stimulate constructive dialogue between the young scientific community and international organizations.
- Raise awareness on the importance of science in the Arab societies.

Objectives

- Network Arab young scientists with other scientists worldwide and the international community.

Towards Knowledge Societies: ArabWAYS 's Contribution (Continued..)

- Strengthen the capacity of young Arab researchers to conduct relevant and high quality research that covers science and technology, environment, and their inter-linkages.
- Advance science and enhance the situation of young scientists throughout the Arab World.

Participate actively in research and development of projects aiming to help in solving the problems related to science and technology in the Arab World.

- Contribute to education and

create opportunities for young researchers and scientists to participate in international research activities.

ArabWAYS members count more than 3700 (end of June 2013) young scientists from different Arab countries. They are connected and updated through the Facebook pages lists, and mailing and assisted by senior researchers.

They belong to a broad range of research fields, with special emphasis on certain topics like: water, climate change, politics, gender studies, agriculture,

neurobiology, renewable energies, computer sciences, biology, organic chemistry, earth sciences (remote sensing), nanotechnology, nuclear and quantum physics, organic chemistry, etc. ArabWAYS is also concerned in giving science and technology a higher profile in the media and education. As young scientists, we have a unique perspective and high responsibility, to enhance the voice of young generation at the public sphere and to be active in building a better future of our societies.

ArabWAYS Involvement in Regional and International Spheres

Partnerships & Collaborations

ArabWAYS started building partnerships and establishing dialogues with international and national organizations such as:

- The German Young Academy
- The US National Academy of Sciences (NAS), USA
- The Global Young Academy (GYA), Germany
- The World Economic Forum (WEF), Switzerland
- The Alexander von Humboldt Foundation, German
- The Maghreb Alexander von Humboldt Alumni Association, Morocco
- Erasmus Mundus Master (EMA) Morocco Network, Morocco

- The Jordanian Humboldt Club, Jordan
- The Italian AvH Association, Italy
- The Egyptian Young Academy, Egypt
- Bibliotheca Alexandrina, Egypt

- Al Akhawayn University, Morocco
- Moroccan Young Earth Scientists Network, Morocco
- The National Academy of Young Scientists (NAYS), Pakistan
- The Islamic World Academy of Sciences (IAS), Jordan
- The Moroccan Scientific Community, Morocco
- The Mediterranean Union of Universities (UNIMED), Slovenia



Prof. Giacomo De Angelis, Secretary General of Humboldt Association in Italy, and Dr. Olfa Mahjoub, ArabWAYS President during "At the crossroads of Africa, Asia and Europe" meeting. (See p. 9)

Main Activities at International Level

First German-Arab Young Scientists Forum (1st GAYSF), Berlin

ArabWAYS has organized, together with the German Young Academy, the First German-Arab Young Scientists Forum (1st GAYSF) in Berlin (June 16-19, 2011) gathering 59 participants from Germany, Hungary, France, Portugal, Netherlands, Yemen, Egypt, Morocco, Tunisia, Bahrain, Syria, Lebanon, Jordan and Palestine.

The participants were young

scientists and researchers in natural sciences, social sciences and humanities, including: Arab scholars of the Alexander von Humboldt Foundation. Those participants represented different fields of research mainly: Water, Biology, Environmental Sciences, Medicine, Political Sciences, Chemistry, Architecture, and Literature. It was an occasion for Arab young researchers to learn from Ger-

man experience and know-how. Believing that the best served by promoting and nurturing the research efforts of promising young scientists who have the potential to become leading scientists in their countries, the German & Arab academies agreed on preparing a joint proposal to make their cooperation efficient, sustainable and with the most sustainable impact.



Group photo of participants in the 1st GAYSF Forum; Dr. Olfa Mahjoub, ArabWAYS President and Dr. Jauad El-Kharraz, ArabWAYS Secretary General, (2nd row, 5th and 6th respectively from left).

Future Earth Workshop for Middle East and North Africa, Nicosia

Future Earth is a 10-year international research venture that will develop the knowledge for responding effectively to the risks and opportunities of global environmental change and for supporting transformation towards global sustainability. In addressing this challenge for the MENA region, the International Council for Science (ICSU) in partnership with the Cyprus Institute has organized on 3-5 June 2013 a consultancy workshop in Nicosia, Cyprus.

Dr. Khadija Darmame, ArabWAYS Vice President, took part in the Future Earth workshop for the MENA region that

also brought together about 30 scientists working on global environmental change and other stakeholders to explore pathways for developing and implementing Future Earth in the region. This workshop is seen as an initial step to build the Future Earth community in the region as well as to establish collaboration with regional and local stakeholders.

<http://www.icsu.org/future-earth/events/future-earth-workshop-for-the-mena-region>

Draft initial design report 17/4/2013):

http://www.icsu.org/future-earth/media-centre/relevant_publications/FutureEarthdraftinitialdesignreport.pdf



Dr. Khadija Darmame, ArabWAYS Vice President, making a presentation during the workshop

1st Arab-American Frontiers of Science, Engineering, and Medicine Symposium, Kuwait*

ArabWAYS was invited to this conference that took place in Kuwait during 17-19/10/2011 by the Frontiers Program of the U.S. National Academy of Science (NAS) which was the co-organizer with the Kuwait Institute for Scientific Research (KISR). The Arab-American Frontiers of Science's Engineering and Medicine Program envision a series of symposia over the next five years to bring together young scientists, engineers, and medical professionals from 22 countries of the Arab League and the United

States to discuss exciting advances in their fields and topics that address challenges to the development of the region.

It aims to provide a format for researchers under the age of 45 that encourages collective and one-on-one discussions among participants. The program thus aims to: enhance the scientific dialogue and exchange among young researchers in Arab countries and the United States, including the Arab science Diaspora, through the ini-

tial meeting and the consequent development of an alumni network; encourage and strengthen scientific collaboration and the transfer of techniques and approaches across disciplines within and beyond the region; and empower young scientists, engineers, and medical professionals.

* <http://www.emwis.net/thematicdirs/events/2011/10/1st-arab-american-frontiers-science-engineering-and-medicine-symposium>

Annual Meeting of the New Champions 2012 - World Economic Forum - Summer Davos, Tianjin*

The Annual Meeting of the New Champions that was held in Tianjin, China, 11-13/9/2012 is the foremost global business gathering in Asia. After five years, it is widely known as the Summer Davos - reflecting the "spirit of Davos" that for more than four decades has meant openness, collegiality and frank, yet friendly, exchange among leaders from business, government, academia, civil society and media. It convened well over 2,000 stakeholders from more than 90 countries. A total of 34 young scientists from 18 countries participated. The theme of the meeting was "Creating the Future Economy".

ArabWAYS participation was very useful because firstly of the audience and the quality of participants and their multidisciplinary backgrounds:

stakeholders, decision makers, economists, governmental representatives (ministers, etc), finance world experts, young entrepreneurs, young shapers, and young scientists, etc.

Those people belong to different communities of the World Economic Forum (AlphaTech, Repowering Transport Project, Capital Markets Climate Initiative, Risk Response Network, CEO Ambassador Group on Climate Change, Schwab Foundation Social Entrepreneurs, Chemicals Industries Steering Council, Social Investment Taskforce, Collaborative Innovation - Biorefineries, Technology Pioneers, Consumer Industry, Technology Pioneers 2013, Engagement Technologies Team, The Dynamic Duo, Family & Private Companies, The Forum Water Initiative, Forum Staff, YGL Advisory Group, G20 Task Force: Green Growth,

YGL Power Dads, Global Shapers Community, Young Global Leaders, New Vision for Agriculture, Young Scientists 2012). Science and Technology are critical inputs for economic growth and poverty alleviation.

Advances in scientific and technological knowledge as well as innovation made possible the significant reductions of poverty and improvements in the quality of life in both developed and developing countries throughout the 20th century, and this will continue as the ability of countries to access, comprehend, select, adapt, and use scientific and technological knowledge will increasingly be the determinant of material well-being and quality of life. Hence, young scientists reclaimed more roles for scientists and especially the new generation of young scientists

Annual Meeting of the New Champions 2012 - World Economic Forum (Continued..)

who are called and have the capacity to bring innovative solutions to the most complex problems of the economy, the environment and the society of the 21st century.

It was a good occasion to interact with the other young scientists present at the conference, among them young scientists from: Turkey, Canada, South Korea, China, Japan, Egypt, Pakistan, United Kingdom, Ghana, US, Mexico, Chili, UAE, Switzerland, Spain, France, Morocco, Italy, South Africa, Malaysia, Benin. They come from diversified backgrounds: Chemistry, Environ-

ment, Biotechnology, Nuclear physics, Physics, nanotechnology, health sciences, computer sciences, ecology, electrical & electronics engineering, political sciences, automation, remote sensing, agriculture, etc.

The Young Scientists program of this event clearly fosters WEF's mission of "Improving the State of the World;" it also furthers the careers and broadens the horizons of Young Scientists by facilitating close and meaningful interactions with other communities, which do not arise as easily in any other setting we know. Interesting parallel meetings took place as

well such as with: Dr. Wan Gang, Minister of Science and Technology of the People's Republic of China, Dr. Shirley Ann Jackson, President of Rensselaer Polytechnic Institute and Board Member of World Economic Forum USA Foundation, Dr. Howard Alper, Chair and President of Science, Technology and Innovation Council of Canada. We also got the occasion to visit Tianjin Polytechnic University and some industrial manufactures and infrastructures.

* <http://www.emwis.net/topics/ways/AMNC12-GYA/>



Participants in the Annual Meeting of the New Champions 2012 including Dr. Jauad El-Kharraz, ArabWAYS Secretary General, (front row, 2nd from right).

First International Conference on Water Resources of Al Jabal Al Akhdar: Reality & Prospective, Al-Bayda City*

The conference was organized in Al-Bayda City, Libya during 5-7/06/ 2012 by the University of Omar Al-Mukhtar, Faculty of Natural Resources & Environmental Sciences, in collaboration with ArabWAYS.

Conference Themes:

- The current water situation in Libya and water resources management practices with a focus on "Al Jabal Al Akhdar" area .
- Future water needs under the reevaluation of the use of non-renewable water resources in accordance with the concept of sustainable development.
- Pollution of water resources: impacts and treatment methods.

- Water and agricultural policies & laws to achieve economic and social growth.
- Building institutional and human capacities in the field of water.
- Climate change and its impact on the water situation in Libya with a focus on "Al Jabal Al Akhdar" area. Growth and development of traditional and non-traditional water resources. Water scarcity and drought: policies and measures to adopt and climate change adaptation .
- Semiarid hydrology and Water harvesting development techniques. Water decision support system; modeling.

This conference provided a forum to discuss how industry is

leveraging or could leverage water resources harvesting and management in Libya and particularly in Al-Jabal Al Akhdar region to have an impact in the real world. It was also the occasion to establish international collaborations and present opportunities after the recent political changes in Libya.

* <http://www.emwis.net/thematicdirs/events/2012/06/first-international-conference-water-resources-al-jabal-akhdar-reality-1>



Global Young Academy General Assembly, Johannesburg*

With a program headlined by the South African Minister for Science and Technology, the Editor-in-Chief of Science magazine and other luminaries, the Global Young Academy (GYA) completed a very successful General Assembly meeting. The meeting, held in Johannesburg, South Africa, during 20-24 May 2012, including 80 young scientists from 40 countries (among them representatives from ArabWAYS), distinguished senior scientists, and science administrators from around the world. With a theme of "Sustainability: Lessons on the road between Rio

and Rio+20," the conference focused on concrete actions young scientists can take to advance a sustainable future. Additionally, the meeting included the founders and founding members of the South African Young Academy of Science (SAYAS), who convened an inaugural meeting to participate in GYA assembly.

ArabWAYS representatives participated also at the Outreach activity at Thuto-Kitso Comprehensive School, Fochville (South-Africa) on May 24. They conducted science sessions for students there. It was

an opportunity for ArabWAYS once again to spread its knowledge and share with others its views and also learn from the others' experiences.

* <http://www.emwis.net/topics/ways/gya2012>



Dr. Jauad El-Kharraz, ArabWAYS Secretary General, with school students in Fochville, South Africa.

Hassan II Agronomy & Veterinary Institute Doctoral Days, Rabat*

Doctoral Studies Centre of Agronomic and Veterinary Institute Hassan II organized its first doctorates in Rabat, Morocco, during 2-4 May 2012 and invited ArabWAYS to participate. The purpose of these days was a dialogue between two worlds near and far at the same time, on the one hand, doctoral students, scientists and researchers, on the other hand, professionals and stakeholders from the socio-economic world. This scientific

event was of particular interest, as it allowed doctoral students to explore their potential for creativity and innovation and awareness of their skills and strengths of their training and know-how.

The sixty doctoral students participating in this first edition of these days with the diversity of themes they deal with reflect the richness and potential of research in the IAV

Hassan II with 22 accredited research units which are backed by 4 areas of Doctoral Education, namely: Agronomy and Agri-Food, Veterinary Sciences, Engineering Sciences and Economics and social. ArabWAYS representative gave a presentation on ArabWAYS activities and promoted our association among Moroccan young scientists.

* <http://www.emwis.net/thematicdirs/events/2012/05/les-premieres-journees-doctoriales-du-cedoc-l-iaiv-hassan-ii>

New Prospects and Challenges for Science and Education in the MENA Region, Marrakech*

This conference was organized in Marrakech, Morocco during 9-11/3/2012 by the Alexander Von Humboldt-Maghreb Alumni Association and the Arab World Association of Young Scientists (ArabWAYS), and sponsored by Alexander von Humboldt (AvH) Foundation (Germany). The conference was attended by 150 participants.

After the opening ceremony, four sessions (i- Energy; ii- Mathematical Sciences; iii- Climate change, aridity, drought and desertification in MENA region; and iv- Biotechnology)

were ran in parallel discussing some of the region priority issues. ArabWAYS chaired the session on climate change.

The 2nd day was dedicated to the "German-Arab Young Scientist Forum Follow-up", while the afternoon session was devoted to "Alexander von Humboldt Mediterranean Network". The 3rd day was dedicated to "Success stories and initiatives of the international scientific research cooperation & networks in the MENA region and new research opportunities emerging from the recent developments". Chaired

by Marwan Mousa, President of Jordanian Humboldt Club, this session featured mainly the launch of the "African-German Network of Excellence in Science", and the introduction of "Erasmus Mundus programme".

Finally, ArabWAYS signed an MoU with Erasmus Mundus Master (EMA) Morocco Network to foster partnership between both networks across and improve synergies.

* <http://www.emwis.net/thematicdirs/events/2012/03/new-prospects-and-challenges-science-and-education-mena-region>

(v) Arab-WAYS representatives can join EMA-AC activities in Northern Africa. However, it is only possible to reimburse expenses of EMA members.

(vi) Arab-WAYS will create a permanent link redirecting to EMA-AC website. Likewise, Arab WAYS link will be featured in EMA-AC website to foster the dissemination of both bodies news and keep easy flow of information.

Duration of the Memorandum

This partnership agreement will last two years (March 2012 – February 2014). It can be renewed, unless termination by one party or the other.

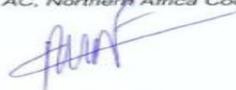
Signed in Marrakech, Morocco on 10 March 2012

Dr. Jauad El Kharraz
General Secretary of Arab-WAYS



Arab World Academy of Young Scientists
Arab-WAYS

Abdeltif El Ouahrani
EMA- AC, Northern Africa Coordinator



Erasmus Mundus Students and Alumni Association –
EMA - African Chapter
Northern Africa Region

World Justice Forum III – WJF III - Barcelona*

ArabWAYS chaired Science & Technology Session at this important conference that was held in Barcelona, Spain, during 20-23 June 2011. The purpose was to help participants that share scientific and technological background understand that it is in their interest and within their power to undertake efforts to advance the rule of law, and also to develop a common sense of responsibility for advancing rule of law among people from science and technology fields.

Intellectual property has rapidly become one of the most important and most controversial subjects in recent years amongst productive thinkers of many kinds all over the world. Scientific work and technological progress now depend largely on questions of who owns what, as do the success and profits of countless authors, artists, inventors, researchers and industrialists. Economic, legal and ethical

issues, play a central role in the increasingly complex balance between unilateral gains and universal benefits from the "knowledge society". Economics, law and intellectual property explores the field in both depth and breadth through the latest views of leading experts in Europe and the USA. It provides a fundamental understanding of the problems and potential solutions, not only in doing practical business with ideas and innovations, but also on the level of institutions that influence such business.

Addressing a range of readers from individual scholars to company managers and policy makers, it gives a unique perspective on current developments. In Arab and African countries, there is still a lack in laws protecting the intellectual property and patents, which is a big challenge for the young scientists and researchers in those regions of the world. Also, we discussed the role of

law in fostering the interface between the policy bodies and the research bodies from one side and the general public (society) from the other side. So, the society can benefit from the research and scientific achievements and can be aware of its endeavors. As future perspective, ArabWAYS promised to contribute to the promotion of the rule of law among the young scientific community in the Arab countries, and concretize that contribution with the World Justice Project. Arab young PhD students and scientists can play a vital role in fostering science and technology in their nations, and this must start by understanding the role of the rule of law.

* <http://www.emwis.net/topics/ways/press-book/arab-ways-chairing-science-technology-session-world-justice-forum-iii-wjf-iii>



Dr. Jauad El-Kharraz, ArabWAYS Secretary General, making presentation in one of his participations.

Other Participations

- WANA Forums of 2010, 2011 & 2012. (See <http://www.wanaforum.org/>)
- Global Young Academy General Assembly, Halle, Germany, 14-18 May 2013. (See <http://www.globalyoungacademy.net/events-2/general-assembly>)
- At the crossroads of Africa, Asia and Europe: Challenges and Perspectives, Venice, Italy, 30 May - 1 June 2013. (See <http://www.univiu.org/component/content/article/96-about-viu-news/674-humboldt-kolleg>)
- World Justice Forum IV – WJF IV – The Hague (The Netherlands), 8-11 July 2013.

ArabWAYS board members also got the opportunity to give several interviews to the media and submit articles and press releases to newspapers and journals (proceedings, Maghreb AvH Alumni Newsletter Second issue* of December 2011, the newsletter of the Moroccan Scientific Community, Daily Times of Pakistan**, etc), which could be consulted at our website.

* <http://www.emwis.net/topics/ways/press-book/maghreb-avh-alumni-newsletter-second-issue>
** http://www.dailytimes.com.pk/default.asp?page=2013%5C03%5C12%5Cstory_12-3-2013_pg11_1

ArabWAYS Board Members

Olfa Mahjoub Tunisia



President

PhD in Water Sciences. Senior Researcher and Head of Chemistry Laboratory in the Rural Engineering Research Laboratory, National Research Institute for Rural Engineering, Water, and Forestry (INRGREF), Tunisia. Her research interests include: water quality, wastewater reuse in agriculture, emerging pollutants in water and soil, environmental and health impacts of reuse. Collaborated with German and US institutions. Among her recent publications: Fenet, H., Mathieu, O., Mahjoub, O., Zhi, L., Hillaire-Buys, D., Casellas, C., Gomez, E. 2012. Carbamazepine, carbamazepine epoxide and dihydroxycarbamazepine sorption to soil and occurrence in a wastewater reuse site in Tunisia. *Chemosphere*, 88: 49-54.

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Mounir Ouzir Morocco



Board Member

PhD in Neuroscience and Immunoparasitology. Ouzir is member of the organizing committee of the 11th International Conference of the Society Of Neuroscientists of Africa (SONA), to be held in Rabat from 13 to 17 June 2013. In 2011, the SfN/IBRO International Travel Grant award and Neuromed travel grant to attend the 41st annual meeting of the Society for Neuroscience (12-16 November 2011) in Washington DC, USA. Among his publications: Ouzir M. (2013). *Impulsivity in Schizophrenia: A Comprehensive Update. Aggression and Violence Behavior, A Review Journal*. 18(2): 247-254.

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Khadija Darmame Morocco



Vice-President

PhD in Human Geography. She has been working in the field of water management and human development (water issues, climate change, poverty alleviation through local development, gender issues, etc). She worked in Europe, North Africa and the Middle East. Collaborated with UNDP, EU, IDRC, Institut Francais du Poche-Orient, Reading University, Paris X Nanterre. Among her publications: Darmame, K. (2012) *Understanding the Linkages between Water Scarcity and Uprooted Population. Contribution to the West Asia - North Africa (WANA) Forum on "Regional Solutions for Water Scarcity in West Asia & North Africa"*.

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Nadjib Drouiche Algeria



Board Member

PhD in Environmental Engineering. He is the Head of Environmental Team, Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique. Among his research interests: desalination, wastewater treatment by membranes and recovery of by products resulting from treatment of PV wastewater and cutting oil used for manufacturing of wafers. Dr. Drouiche was awarded TWAS-ARO YAS Prize 2012: "Sustainable Management of Water Resources in the Arab Region". Among his recent publications: O. Yahiaoui, L. Aizel, H. Lounici, N. Drouiche, M.F.A. Goosen, A. Pauss, N. Mameri, *Evaluating removal of metribuzin pesticide from contaminated groundwater using an electrochemical reactor combined with ultraviolet oxidation. Desalination, Volume 270, Issues 1-3, 1 April 2011, Pages 84-89.*

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Jauad El-Kharraz Morocco & France



Secretary-General

PhD in Physics: Remote Sensing. Information Manager, Euro-Mediterranean Information System on Know-How in the Water Sector (EMWIS Technical Unit), France. His main interests are currently: water accounts & balances, information & data management in the water sector, integrated water resources management, water scarcity & drought, etc. Among his publications: J. El Kharraz, et al.; "Water scarcity and drought in WANA countries"; "Water scarcity and drought in WANA countries. Journal:Procedia Engineering 33 (2012): pp: 14-29. doi:10.1016/j.proeng.2012.01.1172.

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<http://www.emwis.net/overview/TU-team/jauad>

Hisham Hassan Sudan



Board Member

PhD in Molecular Biology. He is an assistant professor of molecular genetics at University of Science and Technology in Khartoum, the Secretary General of the Sudanese Academy of Young Scientists (SAYS), an affiliate of the Sudanese National Academy of Science, and an associate editor in the editorial board of SAYS newsletter. He had worked in several Sudanese universities and research institutions.

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ArabWAYS Board Members

Naoual Bennaçar Morocco



Legal Advisor

PhD in International Law. She is currently Legal Assistant and Researcher on Middle East Arbitration (Oman) for Samir Saleh, London as well as an Expert for the *Agence Nationale de la Recherche*. She is also a Consultant for the World Bank, writing reports on the framework of sustainable development legislation in Morocco. In 2010 she was awarded post-doctorate Fellow, University Laval, Canada. Among her publications: *Du droit international à la gouvernance globale de l'eau, en cours de publication*.

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Firas Abd-Alhadi Jordan



Communication Coordinator

MA in English Literature. He is the Head of Media & Communication Unit at the Insurance Commission of Jordan. He is also an Environment & Development Translator and Communication Consultant for several organizations. His research interests include finance, insurance, environment, integrated water resources management, gender & development. Among his publications: *Patrick Moriarty, Charles Batchelor, Firas Abd-Alhadi, Peter Laban, and Hazem Fahmy (2007) The EMPOWERS Approach to Water Governance: Guidelines, Methods and Tools. Amman, Jordan: EMPOWERS Partnership.*

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Oussama Mahjoub Tunisia



IT Specialist

BA in Computer Science with major in Networking. He is currently a Computer and Network Security Researcher at the Institute of IT-Security and Security Law, University of Passau, Passau, Germany.

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ArabWAYS Members Activities

Innovative Wastewater Treatment Device for Multi Purpose Reuse by Kareem Khaled Hassan

The Device

It is a combination of electro-kinetic process and biological and membrane filtration processes. The overall configuration of this system is named the Submerged Electro-bioreactor (SMEBR) which includes biodegradation, electro-coagulation, electro sedimentation, magnetism and filtration through no-fouled membranes.

Its Advantages

- Provides on-site treatment for wastewater.
- Has a small size and does not require complicated setups.
- Reduces domestic water consumption to only 40-50%.
- Reduces the load on public sewerage system.
- Does not require any chemicals in its treatment processes.
- Very feasible and applicable for small and medium range of applications.
- Effluents of treated water can be used for many purposes: irrigation, washing cars, flushing, washing machines, fire extinguishing, swimming pools, injecting ground water, water supplies enriching.



Kareem Khaled, has a B.Sc. in Agricultural Engineering, Ain Shams University, and is currently doing his M.Sc. in Environmental Engineering at the American University in Cairo

Naima Abattouy Wins L'Oréal-UNESCO For Women in Science Grant

Naima Abattouy, a Moroccan researcher with a PhD in Biology has won in April 2013 a L'Oréal-UNESCO For Women in Science Grant to conduct her postdoctoral research at the Department of parasitology, University of Granada, Spain. In this research, Naima will study the sand fly carrier of Leishmaniasis in the laboratory and conduct field research in her country to determine the environmental and lifestyle factors that facilitate the spread of the disease. Naima's findings will be key to health authorities throughout the world and potentially protect millions from suffering and death.



<http://fwis2013.com/naima-abattouy/>

ArabWAYS Members Activities

Leila Hanafi Selected in Commission on Constitutional Reforms

Leila Hanafi, Moroccan-American international lawyer and Board member of Morocco World News has been selected among a large pool of competitive applicants from the Moroccan diaspora to partake in the newly established intergovernmental Moroccan commission on National Dialogue on Constitutional Reforms. The launch of this initiative, which took place on March 2013, was chaired by the head of the Moroccan Government, Mr. Abdelilah Benkirane. This initiative commissioned by the Ministry of Civil Society and Relations with the Parliament is a landmark model for Morocco- which has the potential to empower Moroccans, in their home country and abroad- to participate in policy-making, through mechanisms such as social audits and proactive public reporting.

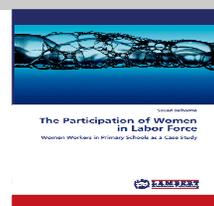
<http://www.morocoworldnews.com/2013/03/82815/leila-hanafi-selected-in-commission-on-constitutional-reforms/>



ArabWAYS Members Publications

The Participation of Women in Labor Force By Souad Belhorma

This book that was published in Germany by LAP Lambert Academic Publishing (2012) suggests that there are four generalizations which can be made about women's participation in labor force, especially among women in primary schools in Fez. First, there are various reasons behind their engagement in labor market as a traditionally male dominated sphere. Second, many women suffer from unequal gender division of labor.



Book cover

Third, women's participation labor market has not changed their traditional gender roles. Fourth, women face different gender based disparities: occupational segregation, unequal pay, gender division of labor... The analysis should be useful to researchers, professionals, policymakers and anyone else who may be considering dealing with gender issues in relation to labor Force.

"Cell-free production of integral membrane aspartic acid proteases reveals zinc-dependent methyltransferase activity of the *Pseudomonas aeruginosa* prepilin peptidase PilD".

By Khaled A. Aly, Emily T. Beebe, Chi H. Chan, Michael A. Goren, Carolina Sepulveda, Shin-ichi Makino, Brian G. Fox & Katrina T. Forest



Integral membrane aspartic acid proteases are receiving growing recognition for their fundamental roles in cellular physiology of eukaryotes and prokaryotes, and may be medically important pharmaceutical targets. The Gram-negative *Pseudomonas aeruginosa* PilD and the archaeal *Methanococcus voltae* FlaK were synthesized in the presence of unilamellar liposomes in a cell-free translation system. Cosynthesis of PilD with its full-length substrate, PilA, or of FlaK with its full-length substrate, FlaB2, led to complete cleavage of the substrate signal peptides. Scaled-up synthesis of PilD, followed by solubilization in dodecyl- β -D-maltoside and chromatography, led to a pure enzyme that retained both of its known biochemical activities: cleavage of the PilA signal peptide and S-adenosyl methionine-dependent methylation of the mature pilin. X-ray fluorescence scans show for the first time that PilD is a zinc-binding protein. Zinc is required for the N-terminal methylation of the mature pilin, but not for signal peptide cleavage. Taken together, our work identifies the *P. aeruginosa* prepilin peptidase PilD as a zinc-dependent N-methyltransferase and provides a new platform for large-scale synthesis of PilD and other integral membrane proteases important for basic microbial physiology and virulence. Dr. Khaled A. Aly, an ArabWAYS member, professor at the Department of Bacteriology, University of Wisconsin-Madison. Full paper is available through: <http://onlinelibrary.wiley.com/doi/10.1002/mbo3.51/full>

"Problems of identification of Andalusian sources of Abū l-Jayr al-Iṣbīlī's Kitāb 'Umdat al-taḥḍīb" By Mariam Gracia Mechbal



The botanical work 'Umdat al-taḥḍīb of the Sevillian author Abū l-Jayr al-Iṣbīlī stands out, for the substantial amount of sources mentioned, which haven't been studied at length till now. We analyze how two of these sources – al-Yahūdī and Ibn Yūlūl – are dealt with, which are the author's opinions on both, and, most importantly, how they are cited and referenced due to some inconsistencies and inaccuracies.

Gracia Mechbal, Mariam. "Fuentes andalusíes en el Kitāb 'Umdat al-taḥḍīb de Abū l-Jayr al-Iṣbīlī: problemas en su identificación". *Miscelánea de estudios árabes y hebraicos. Sección Árabe-Islam*. Vol. 62 (2013). ISSN 0544-408X, p. 47-69. [<http://hdl.handle.net/10481/23052>]