

CURRICULUM VITAE (CV) FOR DR. MAHMOUD I. M. SHATAT

1. **Name of Staff:** Mahmoud I. M. Shatat
2. **Years of Experience** 11
3. **Email:** mahmoodshatat@hotmail.com
4. **Mobile:** +972 (0) 599330224
5. **Address:** Remal – Gaza - Palestine
6. **Education:**

Degree/Diploma obtained	<ul style="list-style-type: none">• PhD in Sustainable Energy and Water Technologies - 2014- Research: Solar Water Desalination – University of Nottingham - UK• MSc in New and Renewable Energy and Environmental Engineering, 2007/8 from University of Durham – UK. Research was focused on Solar water desalination• BSc in Civil Engineering Feb. 2003, The Islamic University, Palestine.• GCE – Tawjhi Science, Palestine Secondary School (Honours), 92.7% Palestine 1998• Graduation project of "Storm Water Harvesting" with 95%
--------------------------------	--

Awards	<p>PhD scholarship: From Nottingham University and the Islamic Development Bank - IDB.</p> <p>MSc scholarship: From Durham University, British council, Durham Palestine Educational Trust and British Council 2007.</p>
---------------	--

7. **Membership in Professional Associations:**

- Member of the World Society of Sustainable Energy Technologies (**WSSET**)
- Member of **MEDRC** - A Center of Excellence in Desalination and Water Reuse Technology in Muscat, Sultanate of Oman.
- Member of Palestinian Engineers Syndicate.

8. **Peer reviewer**

- Reviewer for Sustainable Cities and Societies Journal
- Reviewer for Royal Institute of International Affairs **Chatham House**, London, UK
- Reviewer for the Journal of the American Water Resources Association
- Reviewer for Applied Water Science Journal
- Reviewer for Development Southern Africa Journal

9. **Licenses**

Valid Driving License

10. **Computer skills**

- Windows XP & Microsoft office (Excel, Word)
- Structural Analysis Programs: (**STAAD Pro 2004, SAP 2000, Prokon, Frame Solver 2D, Ben Ari ... etc**)
- Geographical Information Systems (Arc GIS & Arc View – GIS)
- Heat and Mass Transfer Modeling (**Matlab, FLUENT 6.2, Gambit**)
- Heat and Mass Transfer Modeling (**Engineering Equation Solver software**)
- Hydraulic and simulation Programs: (**Epanet & SewerCAD, Sewer, WaterCad**)

- and **Impulse for Water Hammer**)
- o Computational Fluid Dynamics – CFD – (**FLUENT**)
- o Microsoft Project
- o Auto-Cad (2 Dimensions)
- o Good Knowledge for Internet

11. Countries of Work Experience:

- *United Kingdom - UK*
- *Jordan*
- *Palestine*

12. Languages:

Language	Speaking	Reading	Writing
Arabic	Mother tongue		
English	Excellent	Excellent	Excellent

13. Employment Record:

From – to (year)	December,2005 – Until Now
Employer	UNIVERSITY OF PALESTINE – Gaza - Palestine
Positions held	Lecturer

From – to (year)	October, 2011 – Sept., 2014
Employer	Faculty of Engineering - University of Nottingham - UK
Positions held	Researcher in Sustainable Water and Energy Technology

From – to (year)	October, 2011 – Until Now
Employer	Department of Architecture and Built Environment - Institute of Sustainable Energy Technologies - University of Nottingham - UK
Positions held	Researcher in Sustainable Water and Energy Technology

From – to (year)	June, 2009 – Sept., 2011
Employer	Coastal Municipal Water Utility - CMWU / and the German Development Bank - KFW
Positions held	Director of Project Management Unit for Gaza Central Sewerage project

From – to (year)	Jan., 2009 – June, 2009
Employer	Action Against Hunger – ACF
Positions held	Water and Sanitation Program Manager

From – to (year)	2008
Employer	RPS- Water Company And AMEC Group Limited – Darlington – UK
Positions held	Civil and Energy Engineer

From – to (year)	November, 2005 – June, 2008
Employer	Austrian InfraMan Company Gaza Emergency Water Project (GEWP), Funded By The World Bank Client - Coastal Municipal Water Utility - CMWU
Positions held	Civil /Wastewater Engineer

From – to (year)	July,2005 – October, 2005
Employer	JORDAN UNIVERSITY OF SCIENCE AND TECHNOLOGY- JUST – IRBID – JORDAN
Positions held	Water and Environmental Researcher / Water Engineer.

From – to (year)	March, 2003 – June, 2005
Employer	Center for Engineering and Planning - CEP
Positions held	Civil, Water and Wastewater Engineer

14. KEY QUALIFICATION

Dr. Shatat has an **extensive academic research** and **professional experience** especially in **researches, teaching and lecturing** and he also worked in the engineering design, **project management and construction supervision** for many international and national projects especially in **UK, Jordan and Palestine** in the area of **infrastructure development, building technologies and renewable energy**, Particularly in water, water desalination and wastewater sector where he has an extensive experience in the design and modelling of water and wastewater networks in addition to **his strong skills in the energy and carbon saving modeling, and simulation for buildings**. Dr. Shatat was a **PMU director for one of the biggest projects in Palestine " Gaza Central sewerage project" with budget 70 million Euros with the KFW – the German Development Bank and CMWU**. His MSc research was focused on water desalination and treatment using solar energy as a renewable source with an extensive review for other current desalination technologies. **Dr. Shatat has also a very strong research capabilities as he could publish more than 15 papers in the most international journals and conferences such as ASME 2nd International Conference on Energy Sustainability and Applied Thermal Engineering and New and Renewable Energy Journal**. He participated with CEP's consulting engineering company team in the design and supervision works of Khan Younis Sewage networks and Pumping System which include three pumping station and 50 Km main Gravity pipes in addition to preparing details design for Anaerobic pond of Tal AL Sultan wastewater treatment plant. Mean while Dr. Shatat has the ability to work under pressure and the existing current situation in addition to good communication and networking skills. and wide use of computer software's, he was responsible for design detailing and supervision of various water replacements networks UPVC, PE, steel pipes and fittings, specially in the Gaza city and northern governorates of Gaza Strip, Furthermore he was responsible for design and supervision of several private buildings

15. Academic Experience:

UNIVERSITY OF NOTTINGHAM – United Kingdom

From October 2011 – Sept. 2014

Working on solar water desalination research and Energy building efficiency project at the Faculty of Engineering. This project is called Holistic energy-efficient retrofitting of residential buildings in addition to teaching some courses for MSc students in Engineering.

My responsibilities in the project include:

- Thermal modelling of UK's houses for energy efficiency and carbon savings
- Comfort analysis of buildings before and after retrofitting
- Developments of buildings innovations for wall insulations
- Monitoring and investigations of installed technologies such as new wall insulations and PV, thermal collectors, heat pumps.
- Assisting in the socioeconomic study and the feasibility of retrofitting technologies

UNIVERSITY OF PALESTINE – UP – GAZA – PALESTINE

From December 2005 – Until now

Working as Assistant professor at the Civil and Environmental Engineering department and participated in the researches development.

JORDAN UNIVERSITY OF SCIENCE AND TECHNOLOGY – JUST – JORDAN

Working as an **Civil and environmental researcher** on the decentralized wastewater treatment plant for the project titled **North Jordan Valley EcoHealth Project – NJV – Jordan** – 2005

THE ISLAMIC UNIVERSITY – GAZA – PALESTINE

From December 2010 -2011 – Part time

Working as **A lecturer and supervising final year research graduation projects** at the Civil and Environmental Engineering department and participated also in the researches of Civil, energy, water and wastewater.

16. PUBLICATIONS:

- [1] Shatat M., Tetlow D., Riffat S., The Retrofitting of an Old Style Semi-Detached House for Energy Reduction and Carbon Savings under the UK Climate. *Proceedings of the 13th International conference on Sustainable Energy Technology conference. SET2014.* August 25-28th, 2014. Geneva, Switzerland.
- [2] Tetlow D., Shatat M., Riffat S., Application of an economic model to assess the relevance of retrofit technologies. *Proceedings of the 13th International conference on Sustainable Energy Technology conference. SET2014.* August 25-28th, 2014. Geneva, Switzerland.
- [3] Shatat M., Omer S., Riffat S. (2013). Theoretical simulation of small scale psychrometric solar water desalination system in semi-arid region. *Applied Thermal Engineering Journal*, 59 (1), 232-242.
- [4] Shatat M., Mahkamov K., (2010). Determination of Rational Design Parameters of a Multistage Solar Water Desalination Still Using Transient Mathematical Modelling. *Renewable Energy Journal (Elsevier)*, 35(1):52-61
- [5] Shatat M., Al Najjar H., The impacts of temperature variation on wastewater treatment in the Gaza Strip. Gaza wastewater treatment plant as case study. *Proceedings of the International Conference on Water and Climate Change in the MENA-Region Adaptation, Mitigation and Best Practices. April 28-29, 2011. Berlin, Germany.*
- [6] Shatat M., Worall M., and Riffat S., (2013). Economic Study for an Affordable Small Scale Solar Water Desalination System in Remote and Semi-Arid Region. *Renewable and Sustainable Energy Reviews journal.* 25, 543-551.
- [7] Shatat M., Riffat S., and Worall M., (2013). Experimental Investigation of A Novel Solar Powered Psychrometric Low Grade Water Desalination System. *International Journal of Sustainable Water and Environmental Systems (SWES).*,5 (1):13-20. DOI: 10.5383/swes.05.01.003.
- [8] Shatat M., and Riffat S., (2012). Water desalination technologies utilizing conventional and renewable energy sources. *International Journal of Low-Carbon Technologies.* (Oxford University Press), 0, 1-19.
- [9] Shatat M., Riffat S., and Guohui Gan., (2012). An innovative psychrometric solar-powered water desalination system. *International Journal of Low-Carbon Technologies.* (Oxford University Press), 0, 1-12.
- [10] Shatat M., Riffat S., Yuan Y., and Mayere A., Experimental and theoretical investigations of performance of psychrometric humidification and dehumidification solar water desalination system coupled with an evacuated tube solar collector. *Proceedings of the 11th International conference on Sustainable Energy Technology conference. September 2-5, 2012. Vancouver, Canada.*
- [11] Shatat M., Riffat S., Worall M., (2013)., Experimental Investigation of A Novel Solar Powered Psychrometric Low Grade Water Desalination System. *International Journal of Sustainable Water and Environmental Systems (SWES).* 5(1): 13-20

- [12] Shatat M., Riffat S., and Agyenim F., Development of a standardized method of testing solar light simulator. *Proceedings of The 11th International conference on Sustainable Energy Technology conference. September 2-5, 2012. Vancouver, Canada.*
- [13] Shatat M., Riffat S., and Agyenim F., (2013). Experimental Testing Method for Solar Light Simulator Attached With an Evacuated Solar Collector. *International Journal of Energy and Environment (IJEE)*. 2, Volume 4.
- [14] Shatat M., Worall M., and Riffat S., (2013). Opportunities for Solar Water Desalination Worldwide: Review. *Sustainable Cities and Societies*. 9(0): 67-80
- [15] Shatat M., and Riffat S., State of art water desalination technologies using conventional and sustainable energy sources. *Proceedings of The 4th International Engineering Conference (IEC4) Towards Engineering of 21st Century. October 15-16, 2012., Palestine.*
- [16] Shatat M., Mahkamov K., and Johnson K. Experimental and Theoretical Investigations of Performance of Multi-Stage Solar Still Water Desalination Unit Coupled with an Evacuated Tube Solar Collector. *Proceedings of the ASME 2nd International Conference on Energy Sustainability*. August 10-14, 2008 Jacksonville, Florida, USA.
- [17] Shatat M., Mayere A., and Riffat S., (2013). A standardized Empirical Method of Testing Solar Simulator Coupled with Solar Tube and Concentrator Collectors. *Int. J. of Thermal & Environmental Engineering*. Volume 5. (1):13-20.

17. Professional Experience:

**06/2009 To 09/2011 Coastal Municipal Water Utility - CMWU / and the German Development Bank - KfW
Director of Project Management Unit for Gaza Central Sewerage project – Gaza and Middle area.**

Working as a director for the above mentioned project responsible for management and construction supervision for all project activities which include the design and supervision of Central wastewater treatment plant of capacity 90000 m³/day and construction of main coastal wastewater pumping stations, rehabilitation of two another pump stations in addition to two main sewage pressure line of length 5000 m and diameter of 900mm.

Main Duties:

- Following up the implementation of all water and sanitation activities (beneficiary selection, field works, trainings, tenders, etc.) in collaboration and coordination with CMWU departments.
- Monitoring the quality assurance of all CMWU projects to ensure high quality.
- Implement the project on behalf of CMWU in accordance with the agreed upon work plans and with the covenants agreed upon between CMWU and KfW;
- Review, check and correct all contractual documents, final designs and bill of quantities related to the project, including for consulting services;

**01/2009 To 06 /2009 Action Against Hunger – Spain
Water and Sanitation Program Manager**

Working as water and sanitation program manger at ACF Gaza office responsible for the management and carrying out all water and wastewater projects in the Gaza strip in coordination with the local, municipal parties and **CMWU** as a main partner and other international missions

Writing up concept papers, technical proposals and supervising all the technical and managerial issues.

Preparing and following up all water and sanitation projects in the department.

Emergency Response to alleviate the lack of access to basic water needs of families affected by the current crisis in the Gaza Strip.

Working as *Project Manger* for the repair and rehabilitation of *drinking water networks* for 7 neighbourhoods in the damaged areas of Tel Hawa & Zaytoon (Gaza city), Rafah and eastern areas of Khan Yunis - Gaza strip. In addition to public Awareness raising campaigns.

Emergency banks repair and reinforcement of the anaerobic lagoon No. 3 of Gaza wastewater treatment plant.

Working as *Project Manger* for the repair and re-embankment of the damaged lagoon in the GWWTP responsible for following up the construction activities, material approval, revising and issuing payments in addition to quality control.

06/2008 To 08/2008

RPS- Water company and AMEC Group Limited – Darlington – UK

The Power Upgrade Programme for Metropolitan Line and the Circle & District Lines for London Underground.

Dr. Shatat was involved in developing Conceptual design Statements for the Tendering Process for the detailed design and construction stage of the programme. This involved a detailed assessment of the existing record drawings for the power and control cables on the underground network, and the cross referencing of our own survey reports and photographs, to identify spare capacity on the existing cable containment systems to accommodate additional power feeder cables and associated pilot cables. And he also participated in the development of a methodological and analytical approach to a very complex process.

11/2005 To 06/2008

AUSTRIAN I N F R A M A N COMPANY

Gaza Emergency Water Project (GEWP), Funded By The World Bank

Client - **Coastal Municipal Water Utility - CMWU**

Working as a **water and wastewater Engineer** in the design and *supervision of water and wastewater networks, domestic wells* and the management of wastewater sector in Gaza strip as a service provider for a population of more than 1.5 million people.

Responsible for the **construction**, the operation and maintenance of **sewage networks** and monitoring of **the wastewater treatment plants and storm water infiltration basins** in Gaza strip which include three main wastewater treatment plants.

The outcomes of this project was the improvement of water and wastewater service including the new construction and replacement of water and wastewater infrastructure in the Gaza Strip. Meanwhile to build and implement a coastal municipal water utility body for the Gaza strip governorates with a total budget of about 20 million US\$.

7/2005 to 10/2005

JORDAN UNIVERSITY OF SCIENCE AND TECHNOLOGY- JUST – IRBID – JORDAN.

International Development Research Center – IDRC / Canada North Jordan Valley EcoHealth Project – NJV - Jordan

Working as a *researcher, coordinator and designer* in the environmental issues such as designing decentralized wastewater treatment plant in north Jordan valley in Jordan, in addition to environmental field work (water, soil, and air quality tests).

3/2003 to 6/2005

**CENTRE FOR ENGINEERING AND PLANNING - CEP
Civil, Water Engineer**

**Design of Sewage Collection and Pumping System for Khan
Younis Area**

**Client: Palestinian Water Authority (PWA)-Khan Younis
Municipality**

Participating in the design of Khan Younis collection and pumping system. He was responsible for design and preparing of drawings for street sewer profiles. meanwhile he was responsible for data collected from concerned parties such as PWA, Municipality of Khan Younis, in addition to prepare measuring quantities and preparing cost estimate for 7 packages in the project.

**Hawaber and Amer Sewage System and Associated Works at
Northern Governorates:** Participated in the design of the sewage systems in the project which included the design of Amer Pumping station with all associated works and Gravity and pressure sewage lines for Amer catchment area in addition to the collection and disposal of stormwater schemes for the urban communities in the project area. The output of the project is a detailed design and tender documents for the construction of the project elements.

Client: PWA, 2004

**Design of Sewage Pumping Station No.11and Master Plan for
Tal Al Hawa Area- Gaza:** participated in the design of the project which comprises sewage master plan for Tal Al Hawa Area and design of pumping station No. 11 and Force Main. The outputs of the project are a detailed designs and tender drawing and documents

Client: Municipality of Gaza, 2004

Water Network and house connection rehabilitation project.

**Client: Palestinian Water Authority(PWA)-
Operator: Lyonnaise Des Eaux Khatib and Alami-(LEKA)**

Participating in the design and **construction supervision** of 90 km of water distribution networks and reinstatement of roads in Gaza and Northern Area and he was responsible for supervision of the construction of water networks in northern governorates (municipality of Gaza, Jabalia and Beit Lahia) and he was also responsible for preparing detailed design drawings, bill of quantities and cost estimate, mean while he was responsible for the collected data through the project from the related parties like Palestinian Water Authority – PWA, Leka, Municipality of Gaza, Beit Lahia. He also responsible for measurements, surveying the quantities and review the contractor shop drawings and payments.

Design of Middle area Booster Pump Station.

Client: Min of Local Governments.

Participating in the design of Mekerot water booster pumping station. He was responsible for preparing of drawings and Data collection and site investigations which performed through the project period.

Repair & Replacement Initiative Project

Client: MAP / DAI-USAID

Participating in the **design and supervision** for Repair and Replacement Initiative project, MAP/DAI. And he was responsible for Design of steel ware house of area 1625m² and long span 28m

Design of steel ware house of area 600m² and long span 22m
And preparing the detailed design drawings, quantities and tender documents for 8 factories, buildings and workshops in Northern Gaza. The project includes rigid pavements, steel warehouses, administration buildings, water networks, air networks and boundary walls.

1/ 2002 to 2/ 2003

TECHNICAL ENGINEERING CONSULTING COMPANY - TECC

Client: Palestinian Water Authority(PWA)

Funded by: Sweden project/ SIDA

Training in Design and **Supervising the Wastewater gravity and pressure pipelines project in Hawaber** area and using Survey tools in setting out the coordinated points of **El Hawaber wastewater pumping station**. He also responsible for measurements, surveying the quantities and review the contractor shop drawings and payments.

18. CONFERENCES AND WORKSHOPS

- [1] The 13th International Conference on Sustainable Energy Technology conference SET2014. August 25-28th, 2014. Geneva, Switzerland.
- [2] Workshop on Developments on the Sustainable Built Environment and Solar Energy. 31 March – 03th April - Taken place in Nottingham University – United Kingdom.
- [3] Workshop on Novel Energy, Water and Biotechnology Developments in the Sustainable Built Environment. 24- 27th March 2014 taken place in Istanbul Technical University (ITU) – Istanbul – Turkey.
- [4] Middle East and North Africa Energy 2013 conference: Adapting to New Resource Realities. 28 - 29 January 2013, Chatham House, London.
- [5] The International Conference on Energy, Water & Environment (ICEWE 2013). April 21st – 23rd, 2013. Amman, Jordan.
- [6] MEGS Online Energy Future Debate workshop between three universities, University of Birmingham, University of Nottingham and Loughborough University, 14 May 2013.
- [7] MEGS III Christmas Conference, The Midlands Energy Graduate School - MEGS, University of Nottingham, UK. 14th December 2012.
- [8] Digital researcher event, The Midlands Energy Graduate School - MEGS, University of Nottingham, UK. 19th October 2012.
- [9] Systems thinking in energy, The Midlands Energy Graduate School - MEGS III Annual Conference, University of Birmingham, UK. 18-19th September 2012.
- [10] Building the Water Agenda Conference: Policy responses to water scarcity and shock, 9-10 July 2012, Chatham House, London.
- [11] The 8th international conference on Climate change solutions for smart hydrogen and fuel cells power, Birmingham, 29th March 2012.
- [12] The International Conference on Water and Climate Change in the MENA-Region Adaptation, Mitigation and Best Practices. April 28-29, 2011. Berlin, Germany.
- [13] 1st Bi-Annual Global Water Operators Partners (WOPs). Congress and Global Water Partnerships Alliance - GWOPA General Assembly Cape Town, South Africa, March 20th-21st, 2011.
- [14] Energy and Sustainability Research Showcase – Faculty of Engineering - University of Nottingham- Poster competition. I have presented a poster in this event. (March 2012)
- [15] Engineering Postgraduate Research Event on Wednesday 16 May 2012, I gave a presentation and presented a poster about my research. (16 May 2012)
- [16] Seminars on "Capturing CO₂ Emissions associated with coal utilization: a variety of solid adsorbents." Professor Alan Chaffee, Monash University, Australia. 14th May 2012.

- [17] Workshop on displaying your poster and how to make your poster presentation, Faculty of Engineering, 08th May 2012.
- [18] IFAT ENTSORGA 2010, The World's leading trade fair for water, sewage, and Raw materials management. Munich, Germany, 13 – 17th September, 2010.
- [19] Four retaining wall failures, The Nottingham Centre for Geomechanics research seminar, University of Nottingham, UK. 28th November 2012.
- [20] Advanced Turbine Aerodynamics and Heat Transfer Studies at Virginia Tech, Energy and Sustainability Research seminar, The University of Nottingham, UK. 23 January 2013.

19. EDUCATIONAL TRAINING COURSES

- 01 Aug. – 05 Aug. 2010 Participating in an intensive course for **Operation of Effluent Infiltration Basins Seminars – SHAFDAN** Wastewater Treatment Plant – Israel.
- 07 May. – 08 May. 2008 Participating in **Microbiological Safety Course** for 16 hours at school of biological and biomedical sciences – Occupational health and safety - **Durham University – UK**
- 15 Sept.,– 22 Sept.,
2005 Participating in **GIS and GPS Application Using Arc GIS and ArcView** Program for 20 hours at the Jordan University of Science and Technology - **Jordan**.
- 22 Jan. – 1 Feb. 2000 Participating in **Auto CAD – R(14) 2-D** for 30 hours at the Islamic University of Gaza
- 20 Oct. – 8 Nov. 2001 Participating in **Structural Analysis and Design** (STAAD III Program) for 15 hours at the Islamic University of Gaza.
- 30 May – 3 June. 2004 Participating in **Claims & Dispute Resolution in Construction Contracts** for 30 hours at United Nations UN
- 7 July – 29 July 2002 Participating in **GIS Application Using Geomedia** Program for 30 hours at the Islamic University of Gaza.
- 2 Sep. – 21 Oct. 2002 Participating in **Test of English as a Foreign Language (TOEFL)** for 60 hours at the Islamic University of Gaza

20. REFERENCES

- **UNIVERSITY OF NOTTINGHAM – UK**
Chair in Sustainable Energy, Head-Institute of Building Technology & Institute of Sustainable Energy, Faculty of Engineering.
Head of Department of Architecture and Built Environment
Professor Saffa Riffat
Tel: +44 (0) 115 95 13158
E-mail: saffa.riffat@nottingham.ac.uk