

دكتور / باسم شومر

Curriculum Vitae

Basem Hasan Shomar

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Date of Birth: February 6th, 1968

Nationality: German

Education

1986 General Secondary School, Grade: Excellent, 91%

1994 BSc. Chemistry and Biochemistry, Birzeit University, Palestine,
Grade: Excellent.

1999 MSc. Environmental and Water Sciences, UNESCO-IHE
Institute for Water Education, Delft, the Netherlands
Thesis: Heavy Metals in the Groundwater of the Gaza Strip, Palestine

2004 PhD. Environmental Geochemistry, University of Heidelberg, Germany.
Grade: Excellent, 1.0
Thesis: Inorganic and Organic Environmental Geochemical Issues of the
Gaza Strip-Palestine

2006 Postdoctoral Research, Institute of Environmental Geochemistry,
University
of Heidelberg, Germany.
Project: Origin and distribution of elevated nitrate in the Gaza aquifer
using
the isotopes of ¹⁵N and ¹⁸O in NO₃⁻, Occurrence of methemoglobinemia
in
the Gaza Strip.

2006-status Habilitation on Water and Environmental Sciences, University of Heidelberg, Germany.

Current Employment

August 2006 -

Project Manager and Research Group Leader: Assessment of Wastewater/Sludge Reuse in Gaza and West Bank and Implication on Groundwater Quality

- The mass balance and transport of certain organic and inorganic parameters in the food chain through wastewater reuse project
- Bioavailability of heavy metals in plants using laboratory scale digestion system
- Factors affecting occurrence and build up of PAH and PCB through the treatment processes within wastewater treatment facilities
- Speciation of heavy metals in wastewater, sludge and plants

Research and Teaching Experience

1992–1993 Research Assistant, Chemical composition of snail's saliva, Department of Biology and Biochemistry, Birzeit University, Ramaalah, West Bank. (Dr. Ademar Ezzughayyar).

1993-1994 Research Assistant, Male fertility in relation to Glycogen contents of rat testes, Biology & Biochemistry Department, Birzeit University, Ramaalah, West Bank. (Prof. Nabeel Nahhas).

1993-1994 Advanced research in Genetics, Modes of heredity in *Drosophila*, Biology & Biochemistry Department, Birzeit University, Ramaalah, West Bank. (Dr. Ahed Abdulkhalik)

1993-1994 Research on the Health Aspects of Black Yeasts, Mycology, Biology & Biochemistry Department, Birzeit University, Ramaalah, West Bank. (Dr. Mo'nes Abou Asab).

1993-1994 Graduation Project, Regulation of Inflammation by Lipocortin 1, Immunology, Biology & Biochemistry Department, Birzeit University, Ramaalah, West Bank. (Dr. Tamer Issawi).

1993-1995 Teacher Assistant, Biology & Biochemistry Department, Birzeit University, Ramaalah, West Bank.

1994-1997 Researcher, Environmental sciences, Center for Environmental and Occupational Health Sciences, Birzeit University, Ramallah, West Bank.

1995-1997 Teacher Assistant, Biology & Biochemistry Department, Al Azhar University, Gaza Strip (Part-Time).

Career Experience

1994 – 1997 *Director* of Birzeit University- Center for Environmental & Occupational Health Sciences-Branch Gaza.

Coordinator of four projects concerning water and wastewater management in the Gaza Strip:

Ø Dutch Project: Monitoring of groundwater quality surrounding the solid waste dumping site of Gaza. April 95 to October 1996. My mandates were: the *evaluation* of the project in terms of selection of the monitoring wells, management of groundwater quality in the area, *coordination* with municipalities and *reporting* to the Dutch team leader.

Ø Italian Project: Desalination Plants in Khan Yunis area. My mandates were: Project management, assessment of water quality in the area, evaluation of desalination plants performance, and reporting. July to November 1995.

Ø Japanese Project: Wastewater treatment plant in Khan Yunis area. My mandates were: Evaluation of wastewater situation, communication with different stakeholders and policy makers also public representatives. Monitoring of groundwater quality of five wells surrounding the proposed plant. Reporting to the Japanese Team. September to November 1996 and August to October 1997.

Ø USAID project: Wastewater Treatment Plant of Gaza area. My mandates were: Implementation of sampling schemes, sample analysis, adopting financial issues, and reporting to the team leader. July 96 to October 1997.

1999- 2001 UNDP Consultant for the Ministry of the Environmental Affairs (MEnA), Gaza, Palestine (Participation in Environmental Strategy, Action Plan and several Environmental reports).

Ø Focal Point of UNDP project- Institutional Capacity Building of MEnA, communication, reporting and planning to Environmental Inspection

and Monitoring Program (with Mr. T. Rothermyl, UNDP Director General).

- Ø Focal Point of Sensitivity mapping project. Coordination, communication and arrangement for training courses in MENA and USA.
- Ø Organizer and Facilitator of UNDP-GEF Project. Rehabilitation and Protection of Wadi Gaza as a natural Reserve.
- Ø Focal Point for the Gaza Marine and coastal zone Environmental management Plan. EU Project, LIFE Third countries.
- Ø Member of Coastal Aquifer Management Plan (CAMP). Monitoring of groundwater in the Gaza Strip. USAID Project.
- Ø Member of Groundwater protection Plan (Dutch project).
- Ø Organizer and Facilitator of Sector Working Group on the Environment.

Training Courses

August -November 1994

Water and Environmental Research, CEOHS, Birzeit University, Ramallah, West Bank.

October - November 1995

Food Quality Control, Al Azhar University, Gaza, Palestine

November – December 1995

Water and Wastewater Management, CDG (Germany)

August– September 1996

Water and Wastewater Treatment Technologies, JICA, Japan

September 1999

Protection of sea and sea shore from oil spills organized by The American National Oceanic and Atmospheric Administration (NOAA).

February 2003

Short Course, Chemical Reactions at Mineral and Bacteria Surfaces, Institute of Environmental Geochemistry, Heidelberg, Germany.

October 2003

Presenting and Publishing of Scientific Work, Springer Verlag,
Heidelberg

Newspaper and TV Programs

1. Deterioration of water quality in Palestine, an inventory studies (Arabic Language Articles in Al Quds Newspaper) March 1996.
2. Impacts of Solid Waste leachate on the groundwater quality of selected Groundwater wells surrounding the solid waste dumping site of Gaza Governorate. June 1996
3. Heavy metals in the groundwater of the Gaza Strip, MSc Thesis - March 1999.
4. Three TV programs for the Palestinian TV about Environmental Health in Palestine (1999-2000).

Graduate student supervision

1. Tamer Alsiaibi, **MSc. Thesis**: Modeling approach to study the impact of landfill leachate on groundwater aquifer in Gaza Strip. June 2009 (*External Supervisor*).
2. Ziyad Abu Nada, **MSc. Thesis**: Environmental and socio- economical impacts of wastewater reuse for agriculture in the Gaza Strip. June 2009 (*External Supervisor*).
3. Raghid Sabri, **PhD**. starting date: April 2010 (*External Supervisor*).
4. Kamal Zurba, **PhD**. starting date: April 2010 (*External Supervisor*).
5. Ahmad Amr, **MSc**. starting date: April 2010 (*External Supervisor*).
6. Samia Sehweil, **MSc**. starting date: July 2010 (*External Supervisor*).
7. Muhannad Al Khatib, **MSc**. starting date: August 2010 (*External Supervisor*).

Young visiting scientists and students (hosted for laboratory studies)

1. Dr. Ahmed Meghari. "Trace Elements in Purified Water Used for Renal Dialysis". Center for Environmental & Occupational Health Sciences, Birzeit University, Palestine. August-October 2010.

Journal Publications

1. Shomar B, Yahya A, Müller G. 2004. Potential use of treated wastewater and sludge in the agricultural sector of the Gaza Strip. *Journal of Clean Technologies and Environmental Policy*, **6**, 128-137.
2. Shomar B, Yahya A, Müller G, Askar S, Sansur R. 2004. Fluorides in groundwater, soil and infused-black tea and the occurrence of dental fluorosis among school children of the Gaza Strip. *Journal of Water and Health*, **2**, 23-36.

- 3. Shomar B, Müller G, Yahya A. 2005.** Geochemical Features of Topsoils in the Gaza Strip: Natural Occurrence and Anthropogenic Inputs. *Journal of Environmental Research*, **98**, 372-382.
- 4. Shomar B, Yahya A, Müller G. 2005.** Chemical characterization of soil and water from a wastewater treatment plant in Gaza. *Soil and Sediment Contamination: an International Journal*, **14**, 309-327.
- 5. Shomar B, Yahya A, Müller G. 2005.** Seasonal variations of chemical composition of water and bottom sediments in the wetland of Wadi Gaza, Gaza Strip, *Journal of Wetlands Ecology and Management*, **13**, 419-431.
- 6. Shomar B, Yahya A, Müller G. 2006.** Occurrence of Pesticides in the Groundwater and the Topsoil of the Gaza Strip. *Water, Air, & Soil Pollution*, **171**, 237-251.
- 7. Shomar B. 2006.** Groundwater of the Gaza Strip: is it drinkable? *Environmental Geology*, **50**, 743-751.
- 8. Shomar B. 2006.** Trace Elements in Major Solid-Pesticides Used in the Gaza Strip. *Chemosphere*, **65**, 898-905.
- 9. Shomar B. 2007.** Sources of Adsorbable Organic Halogens (AOX) in Sludge of Gaza. *Chemosphere*, **69**, 1130-1135.
- 10. Shomar B. 2007.** Water and Wastewater in the Gaza Strip: Environmentally as Hot as Politically. *Zeitschrift für Geologische Wissenschaften*, **35**, 165-176.
- 11. Shomar B, Osenbrück K, Yahya, A. 2008.** Elevated Nitrate Levels in the Groundwater of the Gaza Strip: Distribution and Sources. *The Science of the Total Environment*, **398**, 164-174.
- 12. Shomar B. 2009.** Sources and build up of Zn, Cd, Cr and Pb in the sludge of Gaza. *Environmental Monitoring and Assessment*, **155**, 51-62.
- 13. Shomar B, Abu Fakher S, Yahya A. 2010.** Assessment of Groundwater Quality in the Gaza Strip, Palestine Using GIS Mapping. *Journal of Water Resource and Protection*, **2**, 93-114.
- 14. Shomar B. 2010.** Gaza Strip: Politics and Environment. *Water Policy*, (online first: DOI: 10.2166/wp.2009.061).
- 15. Shomar B, El-Madhoun F, Yahya A. 2010.** Wastewater Reuse for Alfalfa Production in the Gaza Strip. *Water, Air, & Soil Pollution*, **213**, 105-119.
- 16. Shomar B. 2010.** Groundwater Contaminations and Health Perspectives in Developing World, Case Study: Gaza Strip. *Environmental Geochemistry and Health*, (in press).

17. Shomar B. 2010. Major and Trace Elements in *Nigella sativa* Provide a Potential Mechanism for its Healing Effects. *Journal of Food Composition and Analysis*, (in review).

18. Shomar B. 2010. Most Common Medical Herbs in Four Middle East Countries, Are They Free of Toxic Elements? (in preparation).

Books

1. Shomar B. 2005. Inorganic and organic environmental geochemical issues of the Gaza Strip-Palestine. Shaker Verlag, ISBN 3-8322-3845-X, Aachen, Germany.

Technical Reports

1. Shomar B. 2006. Monitoring of groundwater and soil pollution levels in the Gaza Strip (2000-2005). Förderkennzeichen: 02WT0025. Final Report 2006.

2. Shomar B. 2010. Geochemical characterization of groundwater and the potential reuse of sludge and treated wastewater in the agricultural sector of the Gaza Strip (2006-2009). Förderkennzeichen: 02WT0534. Final Report 2010.

Presentations at International Conferences

1. Impacts of Climate change on ecosystems, Organized by the UNDP-GEF, Amman Jordan, February 2000, Oral Presentation.

2. Renewable sources of Energy, Organized by the Middle East Desalination Center, Oman, Utilization of Passive Solar Energy for water desalination. May 2000, Poster Presentation.

3. Performance of Wastewater Treatment Plants in the Gaza Strip, Current situation and future approach. Proceedings of the International Water Association (IWA) Specialist Conference, BIOSOLIDS 2003, Wastewater Sludge as a Resource, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, June 23-25, 2003. pp. 429-437. Poster Presentation.

4. Environmental Aspects of the Gaza Strip, Case Studies: Soil Geochemistry and Fluoride Geochemistry. Bilateral Meeting, Environmental research and Wildlife Development Agency, Abu Dhabi, United Arab Emirates, 25-30 February 2004. Scientific Meeting.

5. Fluorides in groundwater, soil and infused-black tea and the occurrence of dental fluorosis among school children of the Gaza Strip. Third International Conference on

Children's Health and the Environment, London, UK, 31 March-2 April 2004. Poster Presentation.

6. Deterioration of Groundwater Quality in the Gaza Strip: Alarm for Actions. Proceedings of 2nd International IWA Conference on Automation in Water Quality Monitoring, AutMoNet 2004, Vienna, Austria, April 19-20, 2004. pp. 373-378. Poster Presentation.

7. Gaza Streifen: eine brisante Umweltsituation auf heißem Terrain, Umweltbörse, Institut für Umwelt Geochemie, University of Heidelberg, 1 July 2004. Poster Presentation.

8. Seasonal variations of chemical composition of water and bottom sediments in the wetland of Wadi Gaza, Gaza Strip. The 7th INTECOL International Wetlands Conference, Utrecht, the Netherlands, 25 - 30 July 2004. Poster Presentation.

9. Wastewater of Gaza, Chemistry and Management Approach. Second International Conference: Water for Life in the Middle East, Turkey, Antalya, 10-14 October 2004. Oral Presentation.

10. First International conference: Water value and rights, May 2-4, 2005. Ramallah, Palestine. Pp. 62-63. Oral and Poster Presentations.

11. Impact of wastewater reuse on soil and groundwater. First International Conference on Sustainable Urban Wastewater Treatment and Reuse, SUWTR 2005. September 15-16, 2005, Nicosia - Cyprus.

12. Water Issues in Palestine. The Third International Conference on the "Water Resources in the Mediterranean Basin" WATMED. 1-3 November 2006. Tripoli, Lebanon. Oral and Poster Presentations.

13. Elevated Nitrate Levels in the Groundwater of the Gaza Strip: Distribution and Sources. The second International Conference of Science and Development. 6-7 March 2007, Gaza, Palestine. Oral and Poster Presentations.

14. 14th European Water, Wastewater and Solid Waste Symposium. 5-9 May 2008, Munich, Germany.

15. The Fourth Environmental symposium of German-Arab Scientific Forum for Environmental Studies. 7-8 October 2008. Fez-Morocco. Oral and Poster Presentations.

16. GERMAN-MIDDLE EAST: INTERNATIONAL CONFERENCE; 10-11 May 2009, Amman, Jordan. Berlin-Brandenburg Academy of Sciences and Humanities, Alexander von Humboldt Foundation, German Academic Exchange Service. Topic: Challenges, Opportunities and Problems of Scientific Research in the MENA-Region. Oral Presentation.

17. The Second International Conference: Water value and rights, May 13-15, 2009. Ramallah, Palestine. Oral and Poster Presentations.

18. Organizer of International Short Course: Environmental Chemistry of Heavy Metals. 13-15 July 2009. Institute of Environmental Geochemistry, University of Heidelberg, Germany. More at: <http://www.shotykh.uni-hd.de/sc-heavy-metals/index.html>

19. International Conference on Management of Soil and Groundwater Salinization in Arid Regions Sultan Qaboos University, Muscat, January 11-14, 2010. Oral Presentation.

20. 11th Eurasia Conference on Chemical sciences (EuAsC2S-11), Chemistry Cares. October 6th - 10th, 2010. Dead Sea, Jordan. Invited lecturer: Important Aspects on Environmental Analytical Chemistry. Chairman of the session: 07 IOCD Analytical Chemistry.

21. The First International Conference on Basic & Applied Sciences. 10-12 October 2010, Al Azhar University-Gaza, Palestine. Presentation: Wastewater Reuse for Alfalfa Production in the Gaza Strip, Palestine.

International Scientific Membership

- Member of International Water Association (IWA)
- insciences organization (www.insciences.org)

Reviewer of International Journals:

Water and Health,
Ecotoxicology and Environmental Safety,
Science of the Total Environment,
Environmental Geology,
Indian Journal of Dental Research

Languages

Arabic: Mother tongue

English: Very Good, reading, writing and excellent conversation

German: Good

Personal Interests

- Literature (Arabic and English)
- Nature
- Children's songs

- All human beings

POTENTIAL VALUE TO BE BROUGHT TO THE POTENTIAL POSITION

- Establishment of research strategy based on the national needs
- Optimal-functional use of the research infrastructure (human resources and instruments)
- Enhancement and integrating of scientific research cooperation on national, regional and international levels
- Achievement of the research goals through matching needs, availability and vision
- Teaching new and hot topics
- Involvement of key persons and leading scholars on teaching, seminars and conferences
- Knowledge transfer for both teaching and research

SCIENTIFIC & PERSONAL KEYWORDS

- Water monitoring and assessment
- Water contamination and health
- Water chemistry
- Wastewater reuse
- Soil/sludge interaction
- Organic contaminants (pesticides, PAH, PCB) in water and environment
- Leadership, teamwork, public awareness and participation

TEACHING COURSES

- Environmental quality management
- Principles of water chemistry
- Global metal pollution
- Water and health
- Good laboratory practice

RESEARCH HIGHLIGHTS

- Considerable experience in preparation of research proposals to the national and international agencies
- Coordination with national and international research centers to get research projects
- Considerable experience in the development of analytical methods for the detection of inorganic and organic contaminants in various environmental and biological samples
- Interaction between environmental components (water, soil and human) and the impact on contaminant transport and impact
- Experienced in establishment sampling strategies, sampling campaigns, field work, sample preparation, laboratory analyses, data analyses and results interpretation
- Publication of scientific findings in international journals

References

- 1. Prof. Dr. William Shotyk**

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Tel: 0049 6221 544801

2. Prof. Dr. Jerome Nriagu

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University of Michigan
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Ann Arbor, MI 48109-2029, USA
E-mail: jnriagu@umich.edu
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Fax: 001 (734) 615-7141

3. Prof. Dr. Juliet VanEenwyk

State Epidemiologist for Non-Infectious Conditions
Washington State Department of Health, USA.
Email: juliet100@comcast.net
Tel: 001 360 236 4250

4. Prof. Dr. Heinz Friedrich Schöler

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5. Dr. Elizabeth Dowdeswell

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Former President, Nuclear Waste Management Organization, Canada
Former Director General of UNEP
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