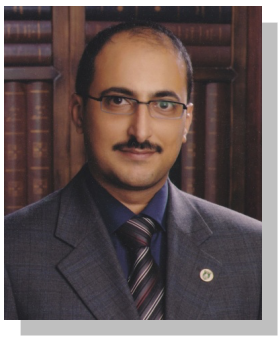
Curriculum vitae *Updated: January 4, 2024*

Tareq Hussein

Professor of Atmospheric Sciences

Personal Information



Full name: Tareq Hussein (طارق فتحي عبدالعزيز حسين)
Date and place of Birth: November 29, 1975, Amman, Jordan
Nationality: Jordanian / Finnish
Gender: Male
Marital status: Married, four kids
Spoken languages: Arabic, English, and Finnish
Webpage / INAR: https://researchportal.helsinki.fi/en/persons/tareq-hussein
Webpage / JU: http://eacademic.ju.edu.jo/t.hussein/default.aspx
ORCID ID: 0000-0002-0241-6435
Scopus: h-index = 42 (ID: 54402121000), about 5700 citations.
Scholar.Google: h-index = 47; i10-index = 121, about 7500 citations
https://scholar.google.com/citations?user=xvXYvHYAAAAJ&hl=en
Researchgate: https://www.researchgate.net/profile/Tareq_Hussein
Linkedin: https://www.linkedin.com/in/tareq-hussein-82469913

Work Address	
University of Helsinki Institute for Atmospheric and Earth System Research (INAR) PL 64, FI-00014 UHEL Helsinki, Finland **tareq.hussein@helsinki.fi**	Mobile +358 2941 50709 +358 50 3273837

Work Address	
University of Jordan School of Science Department of Physics Amman, 11942 Jordan **t.hussein@ju.edu.jo**	Office +962 6 5355000 (ext 22060) Fax: +962 6 5300253

Research interests: Atmospheric and Environmental Sciences; Air Pollution; Urban and Indoor Air Quality; Dynamics and Physical Characterization of Aerosol Particles; Emissions and Fate of Atmospheric Aerosols, Dry Deposition; Exposure; Modeling, Analytical, and Numerical Methods.

الاهتمامات البحثية: علوم طبقات الجو والبيئة؛ تلوث الهواء؛ نوعية هواء المدينة والهواء المنزلي؛ ديناميكا العوالق الهوائية وخصائصها الفيزيائية؛ انبعاثات وفناء العوالق الهوائية؛ عمليات الترسيب؛ الآثار الصحية للعوالق الهوائية؛ الطرق التحليلية والرقمية والنماذج الرياضياتية.

Awards and honors

2021 Honored rewarding the efforts, contribution, and role in advancing the international rank of the University of Jordan via the top 2% researchers in the Stanford researchers list.
2020 Ali Mango Award for Distinguished Researcher 2019 in the following field “Basic Sciences and Information Technology.
2020 Honored rewarding the efforts, contribution, and role in advancing the international rank of the University of Jordan.
2014 Abdul Hameed Shoman Award for Arab Researchers (year 2014, round 33) in the field of “Applied Sciences including Water, Energy, and Environment”.
2013 Distinguished Researcher in year 2013 Award in the field of “Sciences of Energy, Environment, and Water”, awarded by the Scientific Research Support Fund.

1. Academic Qualifications and Degrees

Degree	Period	Field / Subject	Institution	Thesis
Ph.D. (**)	2000 – 2005	Physics, Atmospheric and Environmental Sciences	University of Helsinki, Department of Physics, Division of Atmospheric Sciences, Helsinki, Finland	*Indoor and Outdoor Aerosol Particle Size Characterization in Helsinki. Report Series in Aerosol Science, No. 74, 2005.* Published by the Finnish Association for Aerosol Research.
M.Sc.	1997 – 1999	Physics, Radiation and Environmental Physics	University of Jordan, Department of Physics, Amman, Jordan	*Modeling Exposure to Natural Radioactivity in Jordanian Buildings, 1999.*
B.Sc.	1993 – 1997	Physics	University of Jordan, Department of Physics, Amman, Jordan	*Rutherford Backscattering Spectroscopy, 1997.*

(**) Advanced Physics courses were transferred from the University of Windsor, Ontario, Canada during 1999 – 2000.

2. Administration

Period	Position	Institution
Feb – June 2016	Head of supreme technical committee "University of Jordan Innovation Center"	University of Jordan, University of Jordan Innovation Center, Amman, Jordan
2013 Sep – 2014 Aug	Dean's Assistant for Quality Assurance and Development Affairs	University of Jordan, Faculty of Science Amman, Jordan

3. Academic Experience

3.1. Ranks and titles

Period	Position	Institution	Duties
since Oct 1, 2022	Professor	University of Helsinki, Institute for Atmospheric and Earth System Research (INAR)	Atmospheric Sciences: air quality, physics and chemistry of air pollution - *Graduate Teaching* - *Graduate student supervision* - *Research and Administration*
since Dec 10, 2015	Professor	University of Jordan, Department of Physics, Amman, Jordan	Atmospheric Sciences: environmental and atmospheric physics - *Teaching load of 9 credit hours* - *B.Sc., M.Sc., and Ph.D. physics and environmental courses* - *Graduate student supervision*
2022 Apr – Sep	Associate Professor	University of Helsinki, Institute for Atmospheric and Earth System Research (INAR)	Atmospheric Sciences: air quality, physics and chemistry of air pollution - *Graduate Teaching* - *Graduate student supervision* - *Research and Administration*
2018 Jan – 2022 Mar	Visiting Professor	University of Helsinki, Institute for Atmospheric and Earth System Research (INAR)	Atmospheric Sciences - *Graduate Teaching* - *Graduate student supervision* - *Research and Administration*
2011 Feb – 2015 Nov (*)	Associate Professor	University of Jordan, Department of Physics, Amman, Jordan	Atmospheric Sciences: environmental and atmospheric physics - *Teaching load of 12 credit hours* - *B.Sc., M.Sc., and Ph.D. physics and environmental courses* - *Graduate student supervision*
2010 Feb – 2011 Jan (*)	Assistant Professor	University of Jordan, Department of Physics, Amman, Jordan	Atmospheric Sciences: environmental and atmospheric sciences - *Teaching load of 12 credit hours* - *B.Sc., M.Sc., and Ph.D. physics and environmental courses* - *Graduate student supervision*

2008 Nov – 2010 Jan	Docent in Physics	University of Helsinki, Division of Atmospheric Sciences, Helsinki, Finland	Atmospheric Physics - *Up to 50% undergraduate/graduate teaching and supervision* - *Less than 10% administrative work.*
2000 Aug –2005 Dec	Teaching Assistant	University of Helsinki, Division of Atmospheric Sciences, Helsinki, Finland	Atmospheric Physics - *Up to 20% teaching and student supervision* - *Field courses in atmospheric science*
1999 Aug –2000 Jul	Teaching Assistant	University of Windsor, Department of Physics, Ontario, Canada	- *Laboratory instructor for General Physics I and II*
1998 Aug –1999 Mar	Teacher	Jubilee School for gifted student Amman, Jordan	- *Secondary School Teacher*
1997 Aug –1998 Jul	Teaching Assistant	University of Jordan, Department of Physics, Amman, Jordan	- *Laboratory instructor for General Physics I and II.*

(*) *Also Adjunct Professor (Docent in Physics) at the University of Helsinki, Division of Atmospheric Sciences.*

3.2.Students' supervision

Student	Degree	Period	Institution	Role
Mrs. Inas Hourani	Ph.D.	2021 – 2023	University of Jordan School of Science Department of Physics Environmental and Atmospheric Research Laboratory (EARL)	Supervisor
Mr. Omar Nofal		2020 – 2022		Supervisor
Mrs. Asal Al-Abdullat		2020 – 2022		Supervisor
Mr. Marwan Kloob		2017 – 2019		Supervisor
Mrs. Shatha Saleh		2017 – 2019		Supervisor
Miss Shatha Saadi	M.Sc.	2022 – 2023		Supervisor
Mr. Abdulrahman Irsheid		2021 – 2022		Main Supervisor
Mr. Safwan Okeili		2021 – 2022		Main Supervisor
Mr. Ibrahim Daraghmeh		2021 – 2022		Main Supervisor
Mr. Bilal Zaidan		2021 – 2022		Supervisor
Mr. Omar Jaghbeer		2020 – 2021		Supervisor
Mr. Zaid Bakri		2020 – 2021		Supervisor
Mr. Nizar Abbadi		2020 – 2021		Supervisor/indirect
Mr. Abdulaziz Khalaf		2020 – 2021		Supervisor
Mr. Mahmoud Alghaffari		2020 – 2021		Main Supervisor
Mr. Ali Al-Amir		2018 – 2021		Supervisor
Miss Zein Shilbaieh		2017 – 2018		Supervisor
Miss Safaa Qaisi		2015 – 2016		Supervisor
Miss Sawsan Malik		2015 – 2016		Supervisor
Miss Ola Hassouneh		2010 – 2011		Supervisor
Miss Nahid Atashi	Ph.D.	2018 – 2021	Visiting Ph.D. @INAR Faculty of Geographical Science and Planning, Department of Physical Geography University of Isfahan	Co-supervisor
Miss Jiangyue Zhao	Ph.D.	2018 – 2021	Leipzig University Leibniz Institute for Tropospheric Research (TROPOS) Department of Experimental Aerosol and Cloud Microphysics	Co-supervisor
Miss Reem Shuabi	M.Sc.	2019 – 2021	University of Jordan Faculty of Science Department of Geology	Co-supervisor
Miss Dalia Ananzeh		2022 – 2023		
Miss Yasmin Al-Hussein	M.Sc.	2016 – 2019	University of Jordan Environmental Sciences and Management	Main supervisor
Miss Noor Yasiin		2016 – 2017		Supervisor
Mr. Alaa Bitar		2015 – 2017		Supervisor
Mr. Motasem Al Halaigah		2015 – 2016		Supervisor
Miss Arwa Jaradat	M.Sc.	2017 – 2018	University of Jordan Faculty of Engineering Mechanical Engineering	Co-supervisor
Miss Nerdin Abu Abboud		2015 – 2017		Main Supervisor

Mr. Pak lun FANG (Alan)	Ph.D.	2019 – 2022	University of Helsinki, INAR	Main Supervisor
Miss Salla Sillanpää		2019 – current		Main Supervisor
Mr. Qusay Al-Dulaimy	M.Sc.	2019 – 2020		Supervisor
Miss Xinyang Li (Olivia)		2019 – 2020		Supervisor
Miss Androniki Maragkidou	Ph.D.	2015 – 2018		Co-supervisor
Miss Lubna Dada		2015 – 2019		Co-supervisor
Mr. Bjarke Mølgaard		2010 – 2014		Co-supervisor
Mr. Bjarke Mølgaard	M.Sc.	2008 – 2009	University of Helsinki, Division of Atmospheric Sciences	Supervisor
Miss Hanna Hannuniemi		2007 – 2008		Co-supervisor
Mr. Kimmo Kallonen	B.Sc.	2016 – 2017		Co-supervisor
Mr. Mikko Repo		2013 – 2014		Supervisor
Miss Tiina Naaranoja		2012 – 2013		Co-supervisor
Mr. Juhani Takkunen		2012 – 2013		Supervisor
Mr. Bjarke Mølgaard		2007 – 2008		Supervisor
Mr. Mikael Ehn		2004 – 2005		Co-supervisor

4. Research Experience

4.1. Positions

Period	Position	Institution	Duties
since 2022 Oct	Professor	University of Helsinki, Institute for Atmospheric and Earth System Research (INAR)	Atmospheric Sciences: air quality, physics and chemistry of air pollution: *Teaching* *Administration* *Research projects* *National/international collaboration*
since 2020 Sep	Consultant / Fellowship	Fraunhofer WKI, Material Analysis and Indoor Chemistry, Bienroder Weg 54 E, 38108, Braunschweig, Germany	Indoor Aerosols Modelling Expert: *External advisor/consultant* *Model development* *Indoor Aerosols*
since 2015 Dec (*)	Professor	University of Jordan, Department of Physics, Amman, Jordan	Atmospheric Sciences: environmental and atmospheric physics *Research projects* *National/international collaboration*
2022 Apr – Sep	Associate Professor	University of Helsinki, Institute for Atmospheric and Earth System Research (INAR)	Atmospheric Sciences: air quality, physics and chemistry of air pollution: *Teaching* *Administration* *Research projects* *National/international collaboration*
2018 Jan – 2022 Mar	Visiting Professor	University of Helsinki, Institute for Atmospheric and Earth System Research (INAR)	Atmospheric Sciences: *Teaching* *Administration* *Research projects* *National/international collaboration*
2011 Feb – 2015 Nov (*)	Associate Professor	University of Jordan, Department of Physics, Amman, Jordan	Atmospheric Sciences: environmental and atmospheric physics *Research projects* *National/international collaboration*
2010 Feb – 2011 Jan (*)	Assistant Professor	University of Jordan, Department of Physics, Amman, Jordan	Atmospheric Sciences: environmental and atmospheric physics *Research projects* *National/international collaboration*
2008 Nov – 2010 Jan	Docent in Physics	University of Helsinki, Division of Atmospheric Sciences, Helsinki, Finland	Atmospheric Physics: - *Up to 50% teaching and student supervision*

			- *Up to 10% administrative work* - *Research projects* - *National and international collaboration*
2007 Jun –2008 Oct	Post-Doctor	University of Helsinki, Division of Atmospheric Sciences, Helsinki, Finland	Atmospheric Physics: - *Up to 80% research projects* - *National and international collaboration*
2007 Jan – May (**)	Air Pollution Scientist	Norwegian Meteorological Institute (met.no), MSC-W, Oslo, Norway	Air Pollution Scientist: - *Research projects* - *RD in the EMEP model*
2006 Jan – Dec (**)	Post-Doctor	Stockholm University, Department of Applied Environmental Sciences, Stockholm, Sweden	Environmental and Atmospheric Sciences: - *Research project on resuspension of road dust* - *International collaboration*
2005 Oct – Dec	Post-Doctor	University of Helsinki, Division of Atmospheric Sciences, Helsinki, Finland	Atmospheric Physics: - *Up to 80% research projects* - *National and international collaboration*
2003 Jul –2005 Sep	Researcher	University of Helsinki, Division of Atmospheric Sciences, Helsinki, Finland	Atmospheric Physics: - *Up to 90% research projects*
2003 Jan –2003 Jun	Researcher	Finnish Institute of Occupational Health, Helsinki, Finland	Atmospheric Sciences: - *Research project*
2000 Aug –2002 Dec	Researcher	University of Helsinki Division of Atmospheric Sciences Helsinki, Finland	Atmospheric Physics: - *Up to 90% research projects*
1999 Aug –2000 Jul	Research Assistant	University of Windsor, Department of Physics, Ontario, Canada	- *Ph.D. student research*

(*) *Also Adjunct Professor at the University of Helsinki, Division of Atmospheric Sciences.*
(**) *Also affiliated at the University of Helsinki, Division of Atmospheric Sciences.*

4.2.Scientific training

Period / Role	Course / Workshop	Organizer	Location
2013 November 3 – 7 *(Lecturer)*	Regional training course on atmospheric aerosol sampling procedures and analysis techniques	University of Jordan Department of Physics *Supported by the IAEA*	Amman, Jordan
2004 May 22 – 27 *(Participant)*	*Measurements of Atmospheric Aerosols: aerosol physics, sampling and measurement techniques*	University of Helsinki Division of Atmospheric Sciences	*Hyytiälä, Finland*
1999 Apr 19 – May 21 *(Participant)*	*School on Synchrotron Radiation*	*The Abdus Salam International Centre for Theoretical Physics*	*Trieste, Italy*

4.3.Other Training and Certificates

- Basic Security in the Field II (BSITF II) certificate by the United Nations Department of Safety & Security. *Issued on March 26, 2014 and valid for three years*.
- Advanced Security in the Field (ASITF) certificate by the United Nations Department of Safety & Security. *Issued on March 11, 2014 and valid for three years*.

4.4.Scientific and Research visits

Period	Host	Financial Support
Jan 8 – Feb 3, 2018	Institute for Advanced Research, Nagoya University	Nagoya IAR, Short-term Fellowship Program
Aug 5 – 24, 2017	Leibniz Institute for Tropospheric Research (TROPOS)	TROPOS
Apr 30 – May 13, 2017	e-RASMUS exchange mobility spent at the University of Helsinki	e-RASMUS

Aug 17 – 23 2009	Queensland University of Technology Brisbane, Australia	Queensland University Chancellor's Grant / University of Helsinki
Jun 1 – 15 2009	Institute of Chemical Process Fundamentals Lab. of Aerosol Chemistry and Physics Prague, Czech Republic	Czech Academy of Science
Apr 8 – May 7 2009	University of Jordan, Department of Physics, Amman, Jordan	University of Helsinki
Apr 19 – 27 2009	King Abdulaziz University, Jeddah, Saudi Arabia	University of Helsinki Finnish Meteorological Institute
Jul 1 – Aug 31 2008	Institute of Chemical Process Fundamentals Lab. of Aerosol Chemistry and Physics Prague, Czech Republic	Institute of Chemical Process Fundamentals Väisälän Rahasto
Nov 21 – 30 2007	Institute of Chemical Process Fundamentals Lab. of Aerosol Chemistry and Physics Prague, Czech Republic	University of Helsinki Institute of Chemical Process Fundamentals
Oct 10 – 15 2006	Institute of Chemical Process Fundamentals Lab. of Aerosol Chemistry and Physics Prague, Czech Republic	University of Helsinki Institute of Chemical Process Fundamentals
Nov 1 – 12 2005	Stockholm University, Dep. of Applied Environ. Sciences, Stockholm, Sweden	ACCENT
Sep 10 – Oct 2 2005	Technical University of Crete, Department of Environmental Engineering, Crete, Greece	University of Helsinki

5. Memberships and Committees

5.1. Organizations and Associations

Aerosol Association for the Middle East and north Africa (AAMENA). ***Co-founder*** and co-chair since 2014. Board Member and member.

The Finnish Physical Society: member since 2014.

Finnish Association for Aerosol Research (FAAR): member since 2000.

National Committee in Jordan, International Geoshphere-Biosphere Programme (IGBP). ***Co-founder*** and co-chair. Board Member and member.

Integrated Land Ecosystem-Atmosphere Processes Study (iLEAPS): member.

5.2. Conferences Committees

"AEROSOLS 2018" the 5th Workplace and Indoor Aerosols Conference, April 18–20 2018, Cassino, Italy. Scientific Committee Member.

"DUSTworkshop9" the 9th International Workshop on Sand/Dust Storms and Associated Dust fall, Tenerife Island, Spain. Scientific Committee Member.

International Workshop on Middle East (Regional) Dust Sources and their Impacts., October 23–25 2017, Istanbul, Turkey. Scientific Committee Member.

5.3. National Committees

Member of the "Advisory Group for the Jordan Research and Training Reactor (JRTR)". Jordan Atomic Energy Agency, Amman, Jordan 2023 - current.

Member of the "Evaluation Committee for the Prize of innovation and Creativity in Science and Technology". Scientific Research Fund Support, Ministry of Higher Education, Amman, Jordan 2017.

Member of the "Scientific Committee for Water and Environment". Scientific Research Fund Support, Ministry of Higher Education, Amman, Jordan 2017 – 2018.

5.4. Local Committees

University – member of "Scientific Research Council", the University of Jordan, Amman, Jordan, 2020 – current.

University – member of "NanoCenter Council", the University of Jordan, Amman, Jordan, 2017 – 2018.

Department – member of "Scientific Research Committee", Department of Physics, Faculty of Science, the University of Jordan, Amman, Jordan 2016 – 2017.

Faculty – member of "Scientific Research Committee", Faculty of Science, the University of Jordan, Amman, Jordan 2016 – 2017.

University – head of "Supreme Technical Committee" for the "University of Jordan Innovation Center", the University of Jordan, Amman, Jordan 2016.

6. Editorial

Period	Role	Journal / Special Issue	Publisher
2020 Apr – present	Editorial Board	Jordan Journal of Physics	Yarmouk University
2020 Apr – present	Editorial Board Member	Atmosphere	MDPI, Switzerland
2020 Mar – present	Guest Editor	Atmosphere – Special Issue: Air Quality and Health in the Mediterranean	MDPI, Switzerland
2020 Mar – present	Guest Editor	International Journal of Environmental Research and Public Health – Special issue: COVID-19 and Indoor Air Quality – Impacts and Feedback Cycle	MDPI, Switzerland
2020 Mar – present	Guest Editor	International Journal of Environmental Research and Public Health – Special issue: Data Fusion/Assimilation of Low-Cost Sensors for Air Pollution Exposure	MDPI, Switzerland
2019 Dec – present	Editorial Board Member	International Journal of Environmental Research and Public Health	MDPI, Switzerland
2015 Sep – present	Editorial Board Member	Aerosol and Air Quality Research	Taiwan Association for Aerosol Research
2015 Feb – present	Editor	Advances in Meteorology	Hindawi Publishing Corporation
2012 – 2017	Editorial Board Member	Dataset Papers in Science *Previously "Dataset Papers in Geosciences"* *Previously "Dataset Papers in Atmospheric Sciences"*	Hindawi Publishing Corporation
2011 Dec – 2015 Aug	Editor	Aerosol and Air Quality Research	Taiwan Association for Aerosol Research
2011 Jun – 2012 Oct	Lead Guest Editor	Advances in Meteorology - Special Issue: *Forecasting the Urban Air Quality*	Hindawi Publishing Corporation

7. Funding and Grants

7.1. International Research Projects: total ~5M€

2021–2023: "*Use of Distributed Low-Cost Sensor Networks for Air Quality Monitoring in Amman*". Jesse Kroll (MIT principal investigator) and Tareq Hussein (international collaborator). MIT-Jordan Abdul Hameed Shoman Foundation Seed Fund, Inaugural fund supports early-stage collaborations between MIT and Jordan (**28 kUS$**).

2019–2021: "*Healthy Outdoor Premises for Everyone*". (EU Urban Innovative Actions, Coordinator: City of Helsinki, **4.6 M€** with **1.2 M€** for University of Helsinki).

2010–2014: "*Characterization of Regional and Urban Aerosols in the Western Side of the Kingdom of Saudi Arabia with a focus on Dust Particles*". International collaboration project between the Kingdom of Saudi Arabia and Finland funded by the Deanship of Scientific Research (DSR, Grant no. 1220/430, total amount **570 k€**) at the King Abdulaziz University (KAU, Saudi Arabia).

2016: Personal research grant funded by INTROP to partially cover postdoctoral fellowship at the Stockholm University.

7.2. Finland – National Research Projects: total ~330k€

2023–2025: "*Ilmastonmuutos ja arktiset ekosysteemit: mineraalipölyn ekologiset ja terveysvaikutukset (IBA-ILMA)*". Funded by the Ministry for Foreign Affairs (Vastuuministeriö: LVM), Finland (total amount consortium **~330 k€**, University of Helsinki share 72 k€).

7.3. Jordan – National Research Projects: total ~500k€

2020-2022: "*Measurement and modeling of indoor aerosols and their emissions in Jordanian urban dwellings*". Funded by the Scientific Research Fund Support, Ministry of Higher Education, Jordan (total amount **~175 kJD (210 k€)**, project# WE/2/2/2017).

2018–2019: "Protocol for Monitoring Air Quality in Jordanian Indoor Environments - An Insight into Human Exposure". Supported by the Deanship of Scientific Research, the University of Jordan (infrastructure **~100 kJD**) and funded by the World Health Organization (WHO, Regional Office for the Eastern Mediterranean (EMRO), Centre for Environmental Health Action (CEHA), Amman, Jordan) with a total amount **~15 kJD**. The project also include Indoor Air Quality and Pollutant Assessment Exposure in selected Jordanian Microenvironments.

2016–2017: "*Measurement and Characterization of Urban Background Fine Particle Number Size Distributions in Amman*". Funded by the Scientific Research Fund Support, Ministry of Higher Education, Jordan (total amount **92 kJD (110 k€)**, project# BAS-1-2-2015).

7.4. University of Jordan – Internal Research Projects: total ~70k€

2023–2025: "The Feasibility of Low-Cost Sensors as a Hybrid Network for Air Quality Monitoring and Exposure in Amman". Funded by the Deanship of Scientific Research, the University of Jordan (total amount **19.6 kJD (25 k€)**, project# 19/2023/xxxx).

2020–2022: "Measurement of indoor aerosols and their emissions in Jordanian urban dwellings". Funded by the Deanship of Scientific Research, the University of Jordan (total amount **20 kJD (25 k€)**, project# 19/2020/1108).

2020–2021: "In-Field Investigation for "Panasonic" Optical Detector as a Low-Cost Sensor for Monitoring Indoor PM2.5 Emitted during Combustion Processes". Funded by the Deanship of Scientific Research, the University of Jordan (total amount **4.5 kJD (6 k€)**, project# 19/2020/859).

2017–2020: "*Particulate mass (PM) concentrations of fine and coarse aerosols in the urban background atmosphere of Amman*". Funded by the Deanship of Scientific Research, the University of Jordan (total amount **17 kJD (20 k€)**, project# 19/2017/1231). Extended to another year with additional funding of **2.6 kJD (3.2 k€)**.

2017–2018: "*Measurements of Fine and Coarse Aerosols Concentrations at the University of Jordan*". Funded by the Deanship of Scientific Research, the University of Jordan (total amount **4.5 kJD (6 k€)**, project# 19/2017/2088).

2013–2016: "*Measurement and Characterization of Urban Background Coarse Particle Number Size Distributions in Amman*". Funded by the Deanship of Scientific Research, the University of Jordan (total amount **27 kJD (35 k€)**, project# 1516). Extended to another year with additional funding of **5.4 kJD (7 k€)**.

7.5. University of Jordan – Graduate Students' Research Grants

2022–2023: "Spatial-Temporal Variation of Particulate Matter in Karak Governorate". Funded by the Deanship of Scientific Research, the University of Jordan (**3000 JD (4000 €)**, grant# 2309). *Graduate Student: Omar Jaghbeir.*

2021–2022: "Theoretical investigation for the concentration boundary layer nearby a smooth surface under the effect of Fickian diffusion (Brownian and Eddy)". Funded by the Deanship of Scientific Research, the University of Jordan (**1500 JD (2000 €)**, grant# 154). *Graduate Student: Omar Jaghbeir.*

2021–2022: "Theoretical Investigation for Particle Concentration Inside the Concentration Boundary Layer Nearby a Smooth Surface Under the Effect of Fickian Diffusion". Funded by the Deanship of Scientific Research, the University of Jordan (**1500 JD (2000 €)**, grant# 154). *Graduate Student: Zaid Bakri.*

2020–2021: "Major and trace elements concentrations in the sediments of Kufrain dam using Wavelength Dispersive X-Ray Fluorescence Technique". Funded by the Deanship of Scientific Research, the University of Jordan (**1500 JD (2000 €)**, grant# 555). *Graduate Student: Mahmoud Algaffari.*

2015–2016: "Spatial-Temporal Variation of Fine Aerosol Particles in Amman during the Spring Season of Year 2014". Funded by the Deanship of Scientific Research, the University of Jordan (**1500 JD (2000 €)**, grant# 705). *Graduate Student: Motasem Al Halaigah.*

2015–2016: "Modeling Electrostatic Drifting of Aerosol Particles towards Smooth Surfaces". Funded by the Deanship of Scientific Research, the University of Jordan (**1500 JD (2000 €)**, grant# 770). *Graduate Student: Sawsan Malek.*

2015–2016: "Modeling Thermophoresis of Aerosol Particles onto Smooth Surfaces". Funded by the Deanship of Scientific Research, the University of Jordan (**1500 JD (2000 €)**, grant# 771). *Graduate Student: Safa'a Qaisi.*

8. List of Publications

Theses & Monographs

[1] Ph.D. Thesis, 2005: "*Indoor and Outdoor Aerosol Particle Size Characterization in Helsinki*." Report Series in Aerosol Science, No. 74. Finnish Association for Aerosol Research, University of Helsinki, Helsinki – Finland.

[2] M.Sc. Thesis, 1999: "*Modeling Exposure to Natural Radioactivity in Jordanian Buildings*." University of Jordan, Amman – Jordan.

[3] B.Sc. Monograph, 1997: "*Rutherford Backscattering Spectroscopy*." University of Jordan, Amman – Jordan (not published).

Books and Book Chapters

[1] Hussein T, Löndahl J. Chapter 2: Quantification of Inhaled Deposited Dose During Sand and Dust Storms. In Dust and Health: Challenges and Solutions, editors: Ali Al-Dousari and Muhammad Zaffar Hashmi. Series: Emerging Contaminants and Associated Treatment Technologies. Springer Science and Business Media B. V. 2010. [*ISBN 978-3-031-21208-6, e-ISBN 978-3-031-21209-3, https://doi.org/10.1007/978-3-031-21209-3_2*].

[2] Hussein T, Kulmala M. Chapter 8: Micro-Environmental Modeling. In Human Exposure to Pollutants via Dermal Absorption and Inhalation, editors: Lazaridis M and Colbeck I. Series: Environmental Pollution, Volume 17. Springer Science and Business Media B. V. 2010. [*ISBN 978-90-481-8662-2, e-ISBN 978-90-481-8663-1, DOI 10.1007/978-481-8663-1*].

[3] Hakkarainen H, Hämeri K, Koivula M, Kymäläinen H-R, Virta J, Hussein T, Kanerva P, Sjöberg A-M, Kulmala M, Hautala M, Pehkonen A. Emission measurements from fibrous thermal insulation materials, pp 171–186. *In: Sustainable use of renewable natural resources – from principles to practices, Jalkanen A & Nygren P (ed.), Helsingin Yliopiston Metsäekologian Laitoksen Julkaisuja 34 (2005).*

Articles Published in Peer Reviewed Journals

2024 [1 articles, 0 first author, 0 single author, 1 corresponding author]

[1] Al-Hourani Em, Ali-Saleh SS, Majali MA, Al-Jaghbeer O, Shniekat AM, Al-Qenneh MA, Hussein T. Spatial Variations of Particulate Matter in Mid-West Jordan. Jordan Journal of Earth and Environmental Sciences 2024 (Accepted).

2023 [13 articles, 1 first author, 1 single author, 4 corresponding author]

[2] Alsved M, Nyström K, Thuresson S, Nygren D, Patzi Churqui M, Hussein T, Fraenkel CJ, Medstrand P, Löndahl J. Infectivity of exhaled SARS-CoV-2 aerosols is sufficient to transmit covid-19 within minutes. Nature Scientific Reports 2023, 13, 21245. https://doi.org/10.1038/s41598-023-47829-8

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9. Invited speaker, plenary speech, and keynote speaker

2020 Online Workshop on the how to apply for the ***Scientific Research Support Fund*** program at ***Abdula Hameed Shoman Organization***, 19 December 2020. **Invited Speaker** "Proposal Preparation."

2020 Online Dialogue "Jordan Facing the COVID-19 Pandemic Wave-Front: Expected Scenarios", 23 November 2020. **Invited Speaker** "COVID-19 Transmission in the Air."

2019 Regional workshop for operationalizing the regional framework for action on health and environment 2019 – 2013, and training on health impact assessment of air pollution, Amman, Jordan, 1-4 December 2019 [organized by WHO regional office for the Eastern Mediterranean], **National Consultant and Keynote Speaker** "Regional inhaled dose calculation for particulate matter (exposure modeling)." **National Consultant and Training Session** "Indoor and urban air quality assessment using portable instruments."

2019 Seminar: Environmental Monitoring & Exposure Monitoring in Hazardous Environment, Dubai, United Arab of Emirates, 30 October 2019 [organized by Innovations Technical Equipment Trading CO. L.L.C. and TSI Incorporated]. **Invited Speaker** "Utilization of Portable Instruments to Monitor Size-Fractionated Particulate Matter Concentrations."

2019 InDUST eCOST "3rd general meeting", Porto, Portugal, 22-26 October 2019. **Invited Speaker** "Aerosols measurements, analysis, and data-base in Jordan."

2019 Regional symposium on combating air pollution of black carbon, Amman, Jordan, 26-27 March 2019 [organized by UNEP and Ministry of Environment], **National Consultant and Keynote Speaker** "Black Carbon measurements and assessment – a combination between experiment and analysis."

2019 INDAIRPOLLNET eCOST WG1 WG2 meeting, Budapest, Hungary, 21-22 March 2019. **Invited Speaker** "Particulate Matter and Gaseous Concentrations inside Jordanian Dwellings – a Closer Look at an Eastern Mediterranean Indoor Air Quality and Occupants Behavior."

2019 InDUST eCOST meeting "Desert Dust impacts on Air Quality in Europe: narrowing the gap between current scientific knowledge and users needs", Rome, Italy, 11-12 March 2019. **Invited Speaker** "Dust Contribution in Jordan."

2019 MegaSense workshop, Hyytiälä, Finland, 31 January-1 February 2019, **Keynote Speaker** "*Air Quality"*

2018 The 8th Environmental Symposium of German-Arab Scientific Forum for Environmental Studies, Amman, Jordan, 8-9 October 2018, **Keynote Speaker** "*Seasonal Variation of Urban Accumulation and Coarse Modes in Amman – Jordan"*

2018 WPMN Expert Meeting on Exposure Measurement and Exposure Mitigation of Nanomaterials, Ottawa, Canada, 25-26 August 2018], **Invited Speaker** "*Mass balance modelling, airborne particles, and pollution forecasts"*

2018 Meeting of the Science Advisory Group (SAG) for Aerosols Global Atmospheric Watch (GAW) Program, World Meteorological Organization (WMO) [WMO Secretariat, Geneva, Switzerland, 9-11 July 2018], **Invited Speaker** "*Middle East Aerosol Network*"

2018 Workshop: Mediterranean & Middle East air pollution in a changing climate [the Cyprus Institute, Nicosia, Cyprus, 16-17 May 2018], **Invited Speaker** "*Aerosol Association for the Middle East and North Africa - AAMENA*"

2018 1st InDUST eCOST joint Working Group Meeting [Technical University of Barcelona, Barcelona, Spain, 14-15 March 2018], **Invited Speaker** "*Aerosol Association for the Middle East and North Africa - AAMENA*"

2018 Symposium: Frontiers of Atmospheric Aerosol Studies: Towards the Understanding of the Health and Climate Effects [Nagoya University, Nagoya, Japan, 23-24 January 2018], **Keynote Speaker** "*New Particle Formation in the Urban Atmosphere*"

2017 International Workshop on Middle East (Regional) Dust Sources and Their Impacts [Istanbul, Turkey, 23-25 October 2017], **Invited Speaker** "*SDS-WAS Regional Cooperation in the Middle East*"

2016 RAS0076 - Investigating Atmospheric Particulate Matter and Pollution Source Contributions in Urban Environments Using Nuclear Analytical Techniques (ARASIA), Regional Training Course on the Use of IBA Techniques to Analyze Atmospheric Aerosols [the University of Jordan, Amman, Jordan, 20-24 November 2016], **Lecturer** "*Aerosols: Physical and Chemical Properties, and Effects of APM on Environment and Human Health*"

2016 4th workplace and Indoor Aerosols [Barcelona, Spain, 20-22, April 2016], **Keynote Speaker** "*Real-Time Assessment for Exposure to Aerosols Indoors and Outdoors – a Combined Approach between Modelling and Measurement*"

2016 8th International Petra School of Physics [Amman, Jordan, 11-14 April 2016], **Lecture** "*Dry Deposition onto Surfaces – Model Development*"

2015 1st Africa / Middle East Expert Meeting and Workshop on the Health Impact of Airborne Dust [Amman, Jordan, 2-5, November 2015], **Interactive Talk** "*Research on Air Quality and Health in the Middle East and North Africa*"

2015 Workshop – Interaction between Indoor and Atmospheric Chemistry [Lille, France, 15-17 May 2015], **Invited Speaker** "*Dynamic Behavior of Indoor Aerosols*"

2015 Science Day at the Faculty of Science, the University of Jordan [Amman, Jordan, 13 December 2015], **Keynote Speaker** "*Aerosols in Jordan – Challenges and Needs*"

2014 Special Symposium – Atmospheric Aerosol Emission and Deposition Fluxes – International Aerosol Conference [Busan, South Korea, 28 August - 2 September 2014], **Invited Speaker** "*Modeling Dry Deposition onto Environmental Surfaces*"

2014 RAS0072 - Evaluating and Mapping Air Pollutants Using Nuclear Analytical Techniques (ARASIA), Regional workshop to establish strategy and procedures for atmospheric aerosol sampling, analyses and interpretation of the results [IAEA headquarter, Vienna, Austria, 7-10 April 2014], 3x**Tutorial** "*Overview of Indoor and Outdoor Atmospheric Aerosols*", "*Critical Aspects of Atmospheric Aerosol Sampling*", and "*International Standards for Atmospheric Aerosol Sampling*"

2013 Regional Training Course on Atmospheric Aerosol Sampling – Procedure and Analysis Techniques [the University of Jordan, Amman, Jordan, 3-7 November 2013], 2x**Lecturer** "*Urban Aerosols*" and "*Dynamics of Indoor Aerosols*"

2012 50-years anniversary of the University of Jordan – Jordan: soil, water, and air [Amman, Jordan, 13 December 2012], **Keynote Speaker** "*Urban Aerosols - Jordan*"

2010 Science Day at the Faculty of Science, the University of Jordan [Amman, Jordan, 9 May 2010], **Keynote Speaker** "*Direct and Indirect Effects of Aerosols*"

10. Innovations

	Description	Published
Inhaled Dose	A combined approach between modeling and experiment to calculate the inhaled deposited dose in the lungs	- Hussein et al. Atmos. Environ. 2015, 106: 402. - Hussein et al. Sci. Total Environ. 2013, 458–460: 140.
MC-SIAM	- Multi-Compartment and Size-resolved Indoor Aerosol Model - A novel procedure to estimate the emission rates of indoor aerosol particles	- Hussein et al. Aerosol Sci. Tech. 2005, 39: 1111. - Hussein et al. Atmos. Environ. 2006, 40: 4285.
DO-FIT	An automatic algorithm to parameterize particle number size distributions	- Hussein et al. Boreal Environ. Res. 2005, 10: 337.
FUAQ	Forecasting the Urban Air Quality	- Hussein et al. Atmos. Environ. 2006, 40: 1427. - Mølgaard et al. Atmos. Environ. 2012, 46: 155.
TLDM-AP	Three-Layer Deposition Model for Aerosol Particles on Environmental Surfaces	- Hussein et al. Aerosol Sci. Technol. 2012, 46: 44.