

Prof. Dr. Marwan Suleiman Mousa



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 : French (Good).
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Education

Degree	Year	University	Description
Ph.D.	1984	University of Aston Birmingham UK	<i>Surface Physics and Materials Technology: "A study of field electron emission from composite micro-regimes"</i>
M.Sc.	1979	University of Aston Birmingham UK	<i>Physical Methods of Analysis: "Energy spectra of field emitted electrons".</i>
B.Sc.	1976	University of Sulaymaniyah Iraq	General Physics

Academic Experience

Time Period	Details
May 9 th 1996 – Present	: Full Professor of Physics – Physics Department – Mu'tah University – Jordan.
2017 – 2018 (Academic year)	: Professor of Physics – Physics Department – University of Jordan – Jordan.
2011 – 2012 (Academic Year)	: Professor of Physics – Physics Department – Al-Yarmouk – Jordan
2006 – 2007 (Academic Year)	: Professor of Physics – Physics Department – Al al-Bayt – Jordan
1999 – 2000 (Academic Year)	: Professor of Physics – Department of Electrical and Computer Engineering – Florida International University – USA.
May 1990 – May 1996	: Associate Professor of Physics – Physics Department – Mu'tah University – Jordan.
Sept. 1985 – May 1990	: Assistant Professor of Physics – Department of Natural Sciences – Mu'tah University – Jordan.
Feb. 1977 – Aug. 1977	: Lecturer of Physics – Technical School of the Royal Jordanian Airforce

Administrative Experience

Year	Details
Oct. 23 rd 2019 - Present	: Vice President – Mu'tah University.
Dec. 2017 – Dec. 2018	: Appointed by the Ministry of Higher Education on the Board of Trustees – Jadara University.
Nov. 2009 – Nov. 2017	: Appointed by the Ministry of Higher Education on the Board of Trustees of Al-Ahliyya Amman University.
Sept. 2002 – Sept. 2005	: Appointed as the Dean of the Faculty of Nursing – Mu'tah University.
Sept. 1994 – Sept. 1995	: Head of the Department of Physics – Mu'tah University.

Professional Experience

Year	Details
Nov. 28 th 2019	: Appointed on the Basic Sciences committee of the Science Research Support and Innovation Fund
Nov. 3 rd 2019	: Appointed on the Mu'tah University Council.
Oct. 2019	: Appointed on the Editorial Board of the Journal of Engineering (JE), Univ. of Bagdad. Previously has been on the Journal advisory board.
Sept. 2019	: Appointed as the chairman of the Scientific Research Committee of the Faculty of Science and also that of the Department of Physics – Mu'tah University.
3 rd April 2019	: Appointed by the Administrative Council of the Scientific Research Support Fund (SRSF), on the committee for Basic Sciences of the Fund.
6 th Dec. 2018	: Appointed as a member of the committee for Graduate studies of the Scientific Research Support and Innovation Fund – Ministry of Higher Education & Scientific Research of Jordan (SRS&IF).
13 th Oct. 2017	: member of committee for refereeing the Price for Scientific & Technological Innovation & Creativity, SRSF.
Oct. 2016	: Appointed by the Administrative Council of the SRSF to be on a committee to organize lists of equipment purchased by the SRSF and exist at various institutions in Jordan.
Oct. 2016	: Appointed by the Administrative Council of the SRSF to be on a committee to develop regulations of the fellowships awarded to outstanding students at Jordanian universities.
Sept. 2016	: Appointed by the Administrative Council of the SRSF to chair a committee to evaluate the national journals supported by the Fund.
2010 – 2015	: Jordan, as a Science Humboldt Ambassador, I gave lectures at various Jordanian universities about the Humboldt Foundation and research in Germany mainly about postdoctoral scholarships. As a result, several scholarships and academic exchange programs for Jordanians and Germans were obtained in studying and researching.
Oct. 2015	: member of the national committee (at Higher Council for Science and Tech.) to study establishing "National Nano Technology Center".
Dec. 2015	: Appointed on the Academic Committee of the SRSF.
May 2015	: Appointed on the Founding Committee of "King Abdullah II Center for Nano Technology"
12 th Jul. 2014	: Appointed, by the Higher Education Council of the Ministry of Higher Education and Scientific Research on the Administrative Council of the Scientific Research Support Fund.

Sept. 2013- Nov. 2015	:	Appointed as a member of the committee for Basic Sciences of the Scientific Research Support Fund (SRSF).
Nov. 2012	:	Appointed on the council of "Centre of Theoretical and Applied Physical Sciences" of Yarmouk University.
Sept. 2008	:	Appointed member of the Graduate Studies Council / Princess Sumaya University for Technology (PSUT).
Jan. 2007	:	Appointed by the Ministry of Higher Education and Scientific Research at the Committee assigned the task to evaluate the performance of the "Scientific Jordanian Journals" that are issued by the Ministry and Jordanian Universities.
2006 – 2007	:	Appointed on the Scientific Research Council of the Al al-Bayt University, Mafraq, Jordan.
Sept. 2002	:	Appointed as a member of the committee for appointments and promotions at Mu'tah University.
Feb. 2002 – Aug. 2005	:	Appointed as the University President's Assistant for Scientific, External and International Affairs.
July 29 th – Aug. 3 rd 2001	:	Appointed as a member of the Advisory Board to organize IFES' 2001 which was held in Berlin, Germany.
July 1996	:	Appointed at the Editorial Board of the "Mu'tah Journal for Research and Studies".
Oct. 1996	:	Appointed by the German Academic Exchange Service (DAAD) on pre-selection committee of the candidates for Doctorate scholarships to Germany, Then I was appointed on the same committee for the following years: 2001, 2003, 2004, 2006 till 2015.
June 1996 – July 1997	:	Appointed as the University President's Advisor for International Affairs.

Patents

Year	Details
Feb. 5 th 2001	The Commissioner of patents issued a patent for the joint invention with Professor Thomas F. Kelly, entitled "Resin-coated carbon-fiber cathodes: superior electron source". Patent Application Serial: 60/220, 862.

Scientific Scores

ResearchGate Score	:	34.50
Google Scholar <i>h</i> – index	:	20
Google Scholar Citations	:	1232
Scopus Published Articles	:	85

Awards and Prizes

Year	Details
Nov. 2 nd 2017	: Awarded Certificate of Appreciation from the Applied Science University
June 1 st – Aug. 1 st 2016	: Awarded a Post-Doctoral "Alexander von Humboldt Stiftung Research Fellowship" at Helmholtz-Berlin Center for Materials and Energy (HZB) – Berlin – Germany.
June 1 st – Aug. 1 st 2013	: Awarded a Post-Doctoral "Alexander von Humboldt Stiftung Research Fellowship" at Helmholtz-Berlin Center for Materials and Energy (HZB) – Berlin – Germany.

June 1 st – Aug. 1 st 2012	:	Awarded a Post-Doctoral "Alexander von Humboldt Stiftung Research Fellowship" at Helmholtz-Berlin Center for Materials and Energy (HZB) – Berlin – Germany.
Apr. 10 th 2011	:	Awarded the Medal of the "2 nd Int. Conf. for Materials in Jordan", held in Amman.
Oct. 26 th 2010	:	Awarded the Medal of the Jordanian Astronomical Society at its 23 rd Anniversary Ceremony.
June 1 st – Aug. 31 st 2010	:	Exceptional "Alexander von Humboldt Stiftung Research Award/Fellowship with accompanying research graduate student" at HZB.
June 20 th 2009	:	Mu'tah University Medal awarded by the University and presented by HRH Princess Muna Al Hussein in recognition for the constructive efforts to serve and develop the Nursing Faculty in addition to continuous service to the university.
June 1 st – Aug. 1 st 2009	:	Deutsche Forschungsgemeinschaft (DFG) Post-Doctoral Research Fellowship – HZB – Berlin – Germany.
June 1 st – Aug. 1 st 2008	:	Awarded a Post-Doctoral "Alexander von Humboldt Stiftung Research Fellowship" Helmholtz-Berlin Center for Materials and Energy (HZB) – Berlin – Germany.
June – Aug 2001	:	Scientific Research Contract for three months at Imago Scientific Instruments – Madison – Wisconsin – USA.
June 2000 – June 2001	:	Scientific Post-Doctoral Research Award – Oak Ridge National Lab. (ORNL) – San Francisco – USA.
1999 – 2000	:	"Fulbright Post-Doctoral Research Fellowship" – Electrical and Computer Engineering Department – Florida International University – USA.
Dec. 27 th 1999	:	Mu'tah University Medal awarded and presented by the University president.
Dec. 15 th 1998	:	Members of staff of Mu'tah Univ. Medal awarded in recognition for distinguished efforts to serve Mu'tah University on the national and international levels
Oct. 8 th 1998	:	King Hussein Medal, awarded in recognition of the distinguished scientific efforts in preparation and organization of the 45 th International Field Emission Symposium (IFES) held in Jordan 12 - 18th Sept 1998.
Sept. 17 th 1998	:	HRH Crown Prince Hassan Medal, awarded to distinguished scientists attending the 45 th International Field Emission Symposium (IFES), held in Jordan Sept. 12 th – 18 th 1998.
June 1 st – Aug. 1 st 1997	:	Deutscher Akademischer Austauschdienst (DAAD) Post-Doctoral Research Fellowship – Bonn University – Germany.
June 1 st – Sept. 30 th 1994	:	Resumption of the "Alexander von Humboldt Stiftung Fellowship" Post-doctoral research at (FHI-MPG) – Germany.
June 1992 – Sept. 1993	:	"Alexander von Humboldt Stiftung Fellowship" post-doctoral research at the Fritz-Haber-Institute der Max-Planck-Gesellschaft – West Berlin – Germany.
1991 – 1992	:	"Fulbright Post-Doctoral Research Fellowship" at Stanford Research Institute (SRI), San Francisco – USA. Awarded the SRI certificates for "Scientific Research Distinction" to me and to Mu'tah University.
July 24 th – Sept. 24 th 1988	:	Max-Planck fellowship for Post-doctoral research at the Fritz-Haber-Institute der Max-Planck-Gesellschaft (FHI-MPG) – West Berlin – Germany.
1984	:	Honourary life membership of the Aston University Guild of Students, conferred in recognition for the organization of Aston students International Cultural Weeks.
1984	:	"Aston Graduates Association Prize " for "exceptional contribution to the social and cultural life of the University".

Funded Research Projects

Donor	Project Title
Deanship of Scientific Research Mu'tah University	Field electron emission from MW CNTs as a potential electron source.
Science Research Support Fund (SRSF)	Polymeric nanocomposites doped with magnetically aligned nanoparticles for monovalent and multivalent ion rejection and electromagnetic wave polarizer.
Deanship of Scientific Research Mu'tah University	Characterization of an electron source from SW CNT mounted on W bases.

Membership of Scientific Institutions

Country	Details
UK	Fellow (elected) of the Institute of Physics
Switzerland	Member of the European Physical Society
International	Member of the International Field Emission Society.
Jordan	Member of the Association of Jordanian Physicists and since 2008 till now, President elect of the Jordanian Physics Society
USA	Senior member of the IEEE (The Institute of Electrical and Electronics Engineers)
Korea	"International Field Emission Society – Fellow" title (elected) of the IFES – 2016, on June 16 th , 2016 at Gyeongjo, South Korea and being awarded: "For recognition as an eminent and outstanding scientist in the field of field emission, field ionization, and related phenomena".
(Conference Series)	"IFES Fellow" title (elected) of the International Field Emission Society
Germany	Member of the Max-Planck Alumni Association (MPAA).
Greece	Unanimously Elected Fellow of EMAAS (European Mediterranean Academy of Arts and Sciences)

Courses Taught

Level	Courses
Ph.D.	Surface Physics, Plasma Physics
M.Sc.	Statistical Mechanics, Non-Destructive Technique (NDT) & its applications, High Voltage Breakdown Phenomenon, Methodologies of scientific research, Electrodynamics General Physics 1 (Mechanics and Heat), General Physics 2 (Electricity and Magnetism), General Physics for Agriculture, Electronics, Properties of Matter, Vacuum Technology, Electron Microscopy, Electronics for Computers, Electronic Instrumentation, Final year Graduation Project, Solid State Physics, Digital Electronics & Digital Electronics Lab. Vibrations and Waves,
B.Sc.	Introduction to Light and waves, Thin Film Technology, Quantum Mechanics, Thermodynamics, Statistical Mechanics, Atomic Physics, Modern Physics, Electromagnetic Theory I, Electromagnetic Theory II, Surface Physics, Physics of Meteorology, Environmental Physics, Modern Communication Systems, Physics for Architects, Physics for Life Sciences, Advanced Physics lab. Optics Lab. Applied Physics Lab. Electronic Instrumentation Lab. Vacuum Technology Lab. Electronics Lab. General Physics Lab. (2), General Physics Lab. (1)

Donation of equipment's

Title
1993/4 the Alexander von Humboldt Stiftung "AvH" donated a LEED AUGER instrument, to measure composition of materials, upon the success of the research project carried out at the Fritz-Haber-Institut der Max-Planck-Gesellschaft in Berlin.
1995 the Alexander von Humboldt Stiftung "AvH" donated an upgrade to the LEED AUGER instrument, installed at the "Materials Technology Lab." of the Dept. of Physics, Mu'tah Univ.
1992-5 The FHI-MPG donated several other electronic and ultra high vacuum (UHV) equipment and pumps to complement a surface analysis research facility at Mu'tah Univ. The president of the Univ. officially received them.
1994/5 a Philips Transmission Electron Microscope TEM 300 was donated, installed and operated in Mu'tah University as a result of the collaboration existing with Philips and the Fritz-Haber-Institut.
Similar Philips donated Transmission Electron Microscope was obtained for the - Hashemite University (Zarqa), 1996.
Similar Philips donated Transmission Electron Microscope was obtained for the the University of Jordan (Amman) 1997. Royal Jordanian Airlines kindly shipped the microscope without any charges.
1996/7 Donations, worth hundreds of thousands of D.M. of Periodicals and Books were obtained, for the library of Mu'tah University, from the German DFG and the Ministry of International Communication.
Sept. 2008 the AvH donated a Portable computer for fast data acquisition.
August 2016 Technical university of Berlin and HZB donated valuable materials for research.
Nov 30 th 2016, Prof. Dr. John Banhart, Helmholtz Center Berlin for Energy and Materials, confirmed to me that "The Center obtained all approvals to export the highly advanced piece of equipment the Field Ion Microscope FIM as a donation and arrangements has been made for relocation of the Microscope." This instrument does only exist in advanced countries and would worth about a million Euro; thus providing our researchers with master piece of equipment. It enables studying single atoms, films growth and single-atom surface diffusion from metals ... etc.
Oct. 2018, Institute of Standards Int. of the Czech Academy of Sciences, Brno, Czech donated a "Sample Etching Machine" delivered by Dr Alexandr Knappek whom solid collaboration is taking place with several exchanges of visiting researchers and students. Collaboration Agreement between ISI with Mutah University has been signed.
Nov. 2018 an UHV Turbo Molecular pump has been obtained from Lawazem Scientific and Medical Co. in addition to a Digital Camera and coloured main printer with supply of inks. Four large screens were also obtained.
2019 Dr Alexandr Knappek from ISI visited Jordan and donated a "Dipping and Etching highly accurate Instrument" to the Surface Physics and Advanced Materials Technology Lab. of Mu'tah University. The Univ. appreciated the visit, cooperation (MOU has just been signed between both parties) and presented Dr Knappek with the Univ. shield.

International Activities and Conferences

Year	Country	Title
15 th – 17 th Apr. 2020	Marrakesh (Morocco)	Virtual Conf: 5th Int. conf on Dielectric Materials and Applications.
21 st – 23 rd Oct. 2019	Hammamet (Tunis)	the Humboldt Kolleg "4 th Int conf. Research to application and Markets".
14 th – 19 th Oct. 2019	Adana (Turkey) Cukurova Univ.	the Int. Conf. on Condensed Matter and Materials Science (ICCMMS-19).

12 th – 15 th Sept. 2019	Szczecin (Poland)	the 11 th Congress of Societas Humboldtiana Polonorum – Science in the age of Globalization.
1 st – 4 th Sept. 2019	Harnack House, Berlin (Germany)	"Max-Planck Symposium for Alumni and Early Career Researchers" conference
2 nd – 4 th May 2019	Amman (Jordan)	4 th Int. Conf. on Dielectric Materials and Applications. ISyDMA 4
11 th – 14 th Apr. 2019	Loveno di Menaggio, Villa Vigoni (Italy)	the Int Conf. Kosmos in 21 Century.
15 th – 26 th Aug. 2018	Brno (The Czech Republic)	scientific visit upon the invitation of the Institute of Scientific Instruments (ISI) of the Czech Academy of Sciences (ASCR). Joint scientific collaboration started.
10 th – 15 th June, 2018	Maryland (USA)	the 56 th International Field Emission Symposium (IFES), Atom Probe Tomography and Microscopy (APT&M)
14 th – 17 th May, 2018	Chisinau (Moldova)	the NATO advanced research workshop SPS.EAP.ARW.G5347 "Functional nanostructures and sensors for CBRN defence and environmental safety and security –FNS-CBRN Defence-2018"
1 st – 3 rd May, 2018	Amman (Jordan)	The 12 th Arab Conf. for Astronomy and Space Science & The 7 th Islamic Astronomical Conf.
20 th – 23 rd Apr. 2018	Ohrid (Macedonia)	The Humboldt Kolleg 2018 titled "At the door of European Union: The role of the science for sustainable development of the Balkan region"
10 th – 12 th Apr. 2018	Irbid (Jordan) JUST Univ.	Int Conf. on current nanotechnology and its applications (ICCNA 2018)
4 th – 6 th Apr. 2018	Marrakech (Morocco)	the Int. Conf. Humboldt Kolleg "Beacons of hope in the quest for the next Einstein in MENA"
24 th – 26 th Oct. 2017	Cairo (Egypt)	the "Science and management for sustainable development" held at the National research Centre (NRC) that was jointly organized by Japanese SPS and the AvH Alumni.
10 th – 18 th Aug. 2017	Dortmund (Germany)	scientific visit to the Leibniz-Institut für Analytische Wissenschaften – ISAS – e. V.
1 st – 10 th Aug. 2017	Berlin (Germany)	scientific visit to the Helmholtz Zentrum Berlin.
27 th – 29 th Apr. 2017	Mafraq (Jordan) Al al Bayt Univ.	The Int. Conf / Humboldt Kolleg; "Jordan Life Sciences Conference for Sustainable development"
Mar. 29 th – Apr. 1 st , 2016	Irbid (Jordan) JUST Univ.	The first Scientific Jordanian Tunisian Forum
16 th – 18 th Sept. 2016	Sfax, (Tunis)	the 3 rd Int Conf. "Research in applications & Markets RAM 2016"
12 th – 17 th June, 2016	Gyeongju (Korea)	the 55 th IFES, APT&M "From Science to Industry"
21 st – 23 rd June 2015	Cracow, Poland	Int. Conf. "Progress in Biomedicine and Neuromedicine"
10 th – 13 th May 2015	Torun, Poland	the Humboldt Kolleg Int. Conf. on "Ethics in Science & Life, Standards and Dielemas".
August 31 st - 5 th Sept. 2014	Stuttgart (Germany)	the 54 th IFES, together with two of my graduate students from Mu'tah university, chairing the session: "High Field Nano Sciences"
3 rd – 5 th Apr. 2014	Amman (Jordan)	The Int. Conf./ Humboldt Kolleg; "Building Int. Networks for enhancement of Research in Jordan"

15 th Nov 2013	London (UK)	invited to the Institute of Physics (IOP) to attend the 2013 Awards Dinner of the Institute at the Lancaster Terrace, London W2 2T to celebrate "achievements of the Physics community which recognize outstanding research".
4 th – 7 th July 2013	Poznan (Poland)	the 9 th Congress of the "25 Years Societas Humboldtiana Polonorum"
28 th – 30 th June 2013	Safax (Tunis)	the Humboldt Kolleg "Research to Applications & Markets II"
30 th May – 1 st June 2013	Venice (Italy) Venice Int. Univ.	the AvH Kolleg Italian Association meeting and discussed the AvH Mediteranian Network Projects specially the clean energy one.
12 th – 13 th Nov. 2012	Amman (Jordan)	the German Rectors' Conf. (DIES-Seminar): "Enhancing internationalization and managing partnerships between higher education institutions in Germany and Jordan"
Dec. 28 th – Oct. 1 st , 2012	Cairo (Egypt) German University	the Humboldt Kolleg conference
31 st Aug – 9 th Sept. 2012	Germany	scientific visits to the Dept. of Physics at Chemnitz University from 31 st Aug – 4 th Sept. and to Berlin from 5 th Sept. – 9 th Sept. 2012 to enhance scientific collaboration.
21 st – 25 th May 2012	Alabama (USA)	the 53 rd IFES, chairing the session: "High Field Sciences and Sources 1"
09 th – 11 th Mar. 2012	Marrakech (Morocco)	the Humboldt Kolleg / Int. Conf. "New Prospects for Science and Education in the MENA region"
27 th – 29 th Jun 2011	Berlin (Germany)	the Annual General Meeting of the AvH in Berlin and had the honor to meet with the German President Christian Wulff on June the 28 th
23 rd – 25 th June 2011	Monastir (Tunis)	the Humboldt Kolleg "Research to Applications & Markets"
25 th – 27 th May 2011	Rome (Italy)	Int Conference organized by Universita di Firenze and Assoc. Italiana AVH. A memorandum of understanding "AvH Med Net initiative MOU" to form a network between the Mediterranean Humboldt Clubs (of Italy, Greece, Spain, Masadonea, Maghreb and Jordan) was also signed by Prof. Schwartz the president of Humboldt Foundation.
9 th – 11 th April 2011	Amman (Jordan)	The Int. Conf. on Materials in Jordan – Humboldt Kolleg; under the title "Recent Developments & Future Resources
12 th – 14 th Dec. 2010	Oran (Algeria)	(Humboldt Kolleg) 2nd North African Conference on computational Physics and Chemistry
24 th – 26 th Sept. 2010	Ismaylia (Egypt)	(Humboldt Kolleg) "Green Chemistry for clean environment"
4 th – 8 th July 2010	Sydney (Australia)	the 52 nd IFES
21 st – 23 rd June 2010	Rabat (Morocco)	(Humboldt Kolleg) University Research-Industry: Partnering Opprtunities Conference
26 th – 27 th May 2010	Wroclaw (Poland)	the High Field Nano Science (HFNS) workshop
10 th – 12 th Apr. 2010	Amman (Jordan)	The Workshop on Materials in Jordan" – Humboldt Kolleg
15 th – 19 th Nov. 2009	Amman (Jordan)	the Int. Conference on Frontiers of Chemical sciences IV: Research and Education in the Middle East. A Bridge to Peace and Int development" (Malta-IV).
9 th – 14 th Nov. 2010	Amman (Jordan)	the Middle East Doctoral Student Workshop "Communicating the Chemical Sciences"

17 th – 23 rd Aug. 2009	Berlin (Germany)	the "Thermec Int. Conference" with 1200 participants. Chaired a session "Composite Metallic Materials".
10 th – 11 th May 2009	Amman (Jordan)	the "German Middle East Int. Conference"
4 th – 6 th Mar. 2009	Amman (Jordan)	"The 1 st Int. Conf. on Materials in Jordan" – Humboldt Kolleg
19 th – 23 th Jan. 2009	Berlin (Germany) the German Foreign Ministry	AvH Alumni Network Conference and Bonds of trust 2009 – Germany Alumni in Tomorrow's World
12 th Apr. 2008	Amman (Jordan)	the JCHF and Goethe-Institute in Amman the "1 st Workshop on Materials in Jordan".
11 th – 15 th July 2008	Rouen (France)	the 51 st IFES
25 th – 29 th Oct. 2007	Penang (Malaysia)	the AVH-Kolleg on "Aquatic Sciences cum Enhancement of the Agro-Industry"
18 th – 21 st June 2007	Goteborg (Sweden)	the Workshop on "Current Issues in Atom Probe Tomography" and Int. Steering Committee Meeting of IFES in Chalmers University of Technology
17 th – 20 th July 2006	Guilin (China)	the 50 th IFES
21 st – 25 th Sept. 2006	Penang (Malaysia)	the AVH-Kellog on "Biotechnology and scientific advances for socio-economic benefits"
19 th – 21 st Feb. 2006	Mombay (India)	the 3 rd Western Regional Humboldt Colloquium
12 th – 16 th July 2004	Graz (Austria)	the 49 th IFES
7 th – 11 th July 2002	Lyon (France)	the 48 th IFES
8 th – 12 th May 2002	Bonn (Germany)	the conference for the presidents of the Humboldt Clubs around the world.
12 th – 16 th Nov. 2001	Alicante (Spain)	the 3 rd European Field Emission Workshop
29 th July – 3 rd Aug. 2001	Berlin (Germany)	the 47 th IFES
June – 20 th Aug. 2001	Madison (USA)	participating in a scientific research program on the deployment of electron sources in technology with the University of Madison in Wisconsin and the University of Tennessee, Knoxville.
4 th – 7 th Feb. 2001	Madison (USA)	participating in a scientific workshop at the University of Madison in Wisconsin.
23 rd – 28 th July 2000	Pittsburgh (USA)	the 46 th IFES
Feb. – May. 2001		fellowship doing research on developing electropolishing and ion milling techniques to fabricate Atom Probe Field Ion Microscopy (APFIM) specimens of bulk molybdenum-based alloys.
June 2000 – Feb. 2001	Tennessee (USA) Oak Ridge National Laboratory	fellowship doing research at the Microscopy & Microanalytical Sciences / Metals and Ceramics Division working on a novel approach to gaseous field ion sources for focused ion beam applications.
12 th – 15 th Apr. 2000	Washington, D.C. (USA)	the Fulbright Visiting Scholar Conference "Modern democracy in a Changing World".
12 th – 17 th March 2000	Florida (USA) Orlando, Univ. of Central Florida	the 3rd joint meeting of the Microscopy Society of America and the American Vacuum Society
1 st – 3 rd Nov. 1999	Miami (USA)	the TECH EAST 1999 – 2009 Conference
12 th – 18 th Sept. 1998	Irbid (Jordan)	chaired the 45 th IFES

23 rd July 1997	Erlangen (Germany)	gave an invited talk at Erlangen University.
6 th – 11 th July 1997	Tsukuba (Japan)	the 44 th IFES
18 th – 26 th Apr. 1997	Germany	visiting various scientific institutions in Berlin, Leipzig, Hannover and Bonn upon the invitation of the Friedrich-Ebert-Stiftung.
16 th – 23 rd Feb. 1997	Bonn (Germany)	the international meeting for the presidents of the Alexander von Humboldt clubs around the world.
14 th – 19 th July 1996	Moscow (Russia)	the 43 rd IFES
7 th – 12 th July 1996	St. Petersburg (Russia)	the 9 th Int. Vacuum Microelectronics Conference (9 th IVMC)
10 th – 14 th June 1996	Polanica Zdroj (Poland)	the 18 th "International Seminar on Surface Physics" (ISSP)
7 th July – 11 th Aug. 1995	Madison (U.S.A.)	the 42 nd IFES
24 th July – 11 th Aug. 1995	Germany	Scientific visits to investigate the possibility for joint collaboration and to establish academic exchange program, upon the invitation of: Bonn Univ. Alexander-Von-Humboldt Stiftung, Erlangen Univ. VSI, Free Univ. of Berlin, Fritz-Haber Institute and BESSY.
11 th – 16 th June 1995	Koln (Germany)	Scientific visit to educational establishment
11 th – 15 th July 1994	Rouen (France)	the 41 st IFES
6 th – 11 th June 1994	Kudowa (Poland)	the 17 th ISSP
30 th Aug. – 4 th Sept. 1993	Warwick (U.K.)	the 13 th European Conference on Surface Science
2 nd – 6 th Aug. 1993	Nagoya (Japan)	the 40 th IFES
5 th – 10 th Oct. 1992	Kudowa (Poland)	the 16 th ISSP
10 th – 14 th Aug. 1992	Halifax (Canada)	the 39 th IFES
5 th – 9 th Aug. 1991	Viena (Austria)	the 38 th IFES
29 th July – 3 rd Aug. 1990	Albuquerque (USA)	the 37 th IFES
16 th – 30 th Jan. 1990	(USSR)	to give lectures and investigate the possibility for joint investigations, upon the invitation of: Academy of Sciences of the U.S.S.R. in Moscow and Leningrad, Academy of the Ukrainian SSR in Kiev, Electro-Technical Institute of Communications in Leningrad, and Bashkir State University in Ufa.
30 th July – 4 th Aug. 1989	Oxford (UK)	the 36 th IFES
17 th – 23 rd July 1988	Oak Ridge (USA)	the 35 th IFES
9 th – 14 th May 1988	Piechowice (Poland)	the 12 th ISSP
11 th – 14 th Apr. 1988	Manchester (UK)	the First "European Vacuum Conference"
14 th – 18 th Sept. 1987	Crowly (UK)	attended a vacuum technology course at "Edwards High Vacuum PLC".
12 th – 19 th July 1987	Osaka (Japan)	the 34 th IFES
17 th June – 8 th July 1987	Trieste (Italy)	a study visit to the "International Center for Theoretical Physics"
6 th – 11 th July 1986	West Berlin (Germany)	the 33 rd (I.F.E.S.)

National Activities and Conferences

Year	Title
14 th Mar. 2018 – present	Aoun Cultural association, founding member and member of the Administrative Committee for 5 years.
Sept. 2017 – present	The JU: participated in organizing various activities about scholarships to Germany, Physics Day of the Science Faculty and other seminars.
10 th Oct. 2019	Amman, the Univ. of Jordan, the 16 th Jordanian Chemistry Conf.
2 nd June 2019	Amman, Letter of gratitude from the Minister of Higher Education and Scientific Research for running seminar about applications for funding from the Science Research Support and Innovation Fund (SRSF).
4 th Apr. 2019	Amman, Haya Cultural Center, organized jointly with the JCHF and Al-Balqa' Applied University and FNF organized a day Conference titled "New horizons in technical and vocational training in Jordan".
25 th – 28 th Mar. 2019	Amman, the U.N./Jordan Workshop: Global partnership in space exploration and innovation. Co-chairing the session "Terrestrial Analogues"
26 th Nov. 2018	Amman, UNDP & Prince Faisal Research Center for Dead Sea Environment and Energy "مشروع التقليل والحد من الملوثات العضوية الثابتة"
25 th Oct. 2018	Amman, organized the joint Conf. between the JCHF and the FNF titled "Building successful partnerships between academia and industry – scientific research and labor market needs"
9 th – 12 th Oct. 2018	Amman, the 9 th Petra school of Physics.
16 th – 18 th July 2018	Amman, The Int. Conf on fractional differentiation and its applications (ICFDA), held at the Univ. of Jordan.
11 th – 12 th May 2018	Amman, DAAD –AvH-Alumni Seminar in Amman titled "Meeting the challenges in the region – what can Int / regional academic co-operation contribute"
29 th – 30 th Nov. 2017	Amman, the 6 th Int. Conf. (ZTIPC 2017: New Horizons in Pharmaceutical Research) held at al Zaytoonah Univ.
12 th – 14 th Sept. 2017	Amman, the First Int. Conf. Geospatial Information Management "Mapping the Future".
10 th – 13 th July 2017	Irbid, the Int. Conf. on advanced Materials (ICAM 2017).
5 th – 6 th Apr. 2017	Mafrag, the Conf. "Chemistry and Biosciences".
4 th Apr. 2017	Al-Karak, the Science Day of Science Faculty.
6 th – 8 th Dec. 2016	Amman, member of the preparatory committee of the 2 nd Conference for "Arab Survey and Geonames Experts".
24 th Nov. 2016	A conference was organized on about "Integrated Solid Waste Management in Jordan" held at landmark Hotel under the patronage of HE Minister of Water.
26 th – 28 th Apr. 2016	Irbid, the Spring Workshop "Nanotechnology in heavy metals removal and water treatment & Scientific Nanotechnology Day".
13 th Apr. 2016	A conference was organized on which presented the success story of higher education and industry in the field of Pharmacy and how to bridge the gap between them. HRH Princess Sumaya bint el Hassan patronized the Conf. giving a talk. Deans of Pharmacy faculties at several Arab Univ. Sec. General of the Arab Association of Pharmacy Faculties, Min. of Industry and several others from academia and industry actively participated. This Conf. to be followed by other conferences to work on bridging the gap.
24 th Nov. 2015	Amman, organized a joint educational and cultural event: A seminar was on about "The effect of Syrian refugees on the Higher Educational system (Universities) in Jordan".

21 st – 23 rd Oct. 2015	Amman, the Int. Pharmaceutical Conf. 2015 on "Frontiers in the pharmaceutical Sciences and Pharmacy Practice: A global perspective" within collaboration project between Al-Zaytoonah Univ of Jordan and Univ. of Toledo under the title "Frontiers in the Pharmaceutical Sciences and Pharmacy Practice: A global perspective".
18 th – 22 nd Oct. 2015	Madaba, participated at the Winter Workshop 2015 on "Heavy Metal removal and water treatment" within collaboration project between GJU and Leibnitz Institute for analytical science – ISAS – e.V.
6 th Oct. 2015	Amman, organized a joint educational and cultural event: "Reality and ambition of scientific research in the Jordanian academic institutions".
9 th Sept. 2015	Amman, organized a joint educational and cultural event: "Reform in education system in Jordan; Workshop"
13 th Aug. 2015	Amman, the meeting of Jordanian Scientists & Technologists Abroad – JoSTA Network.
5 th – 8 th May, 2015	Petra, the 15 th Int. congress of the Int. Society for Ethnopharmacology.
27 th – 29 th Apr. 2015	Irbid, the Int. Conf. on advanced Materials (ICAM 2015) at JUST. My graduate students presented two papers at the Conf. that were refereed and published at the British Journal of the Institute of Physics, U.K.
16 th Apr. 2015	Amman, organized a joint educational and cultural event: "Young Syrian Refugees in Jordan's higher education systems: Challenges and policies"
8 th Apr. 2015	Mafraq, the 14 th Jordanian Chemistry Conf. at Al al-Bayt University.
30 th Nov 2014	Amman, organized a joint educational and cultural event: "Educational reforms in Jordan – What is still needed?"
12 th Oct. 2014	Amman, organized a joint educational and cultural event: "Performance measures and accountability of Jordan's higher education system"
1 st Dec. 2013	Amman, organized a joint educational and cultural event: "Supporting intellectual freedom-strategies for scientific and educational progress in Jordan"
24 th March, 2013	Amman, organized a joint educational and cultural event: "The role of intellectual freedom in cultural, technological and economic development Jordanian and German perspectives"
8 th Nov. 2012	Amman, giving a lecture for elementary students of Al Fareed Model Schools in Amman, titled "Industrial materials and its role in development".
14 th Oct. 2012	Amman, the 1 st Arab Robotics Conference.
26 th Apr. 2012	Amman, Conf. at PSUT under the title "Jordanian Professors Today: Humboldtians Tomorrow", Society of Friends of Humboldt. Presentations and discussions about Humboldt cooperation's between Germany and Jordanian Humboldtians: valuable experience.
13 th Dec. 2011	Irbid, Participating at the Faculty of Archaeology and Anthropology of Yarmouk Univ in workshop about Archaeology of North Jordan plateau during the bronze and iron ages.
4 th – 8 th Dec. 2011	Amman, the 2 nd Conf. for Amman City: "Sustainability and Participation" organized by Amman Municipality and Center for New Jordan Studies
17 th Nov. 2011	Amman, gave a presentation about "Scholarships in Europe and especially in Germany" organized in cooperation between the "Jordanian Astronomical Society" and the "Jordanian Physics Society" at its third anniversary. Discussion also included opportunities at the USA and the world.
12 th – 14 th Nov. 2011	Amman, attended the 9 th SESAME Users Meeting.

17 th Nov. 2011	Amman, attending the "Understanding the Arab Spring - Recommendations for Peaceful Transitions to Democracy" organized by The Int Crisis Group (ICG) and the Friedrich Naumann Foundation for Liberty (FNF).
12 th – 14 th Nov. 2011	Amman, SESAME Users 9 th Meeting.
28 th Apr. 2011	Amman, SESAME Users Meeting.
27 th Apr. 2011	Amman, Jordan, gave a talk "Jordanian professor development through Int. cooperation" at the Pharmaceutical Education and requirements of work market.
5 th May 2011	Al-Karak, participating at the 4 th Scientific Week of the faculty of Science, Mu'tah University.
9 th Dec. 2010	Amman, Final Conference on European-Jordanian scientific collaboration together with small projects exhibition. Inaugurated by HRH Princess Hassan Bin Talal.
25 th Sept 2010	Amman, "Returning Experts Program" in cooperation with vJADU seminar about joint masters programs between Germany and Jordan: Water Resources management & "Renewable Energy for MENA region"
15 th – 17 th June, 2010	Amman (Jordan) National Conference for the development of study plans, teaching and learning, and scientific research
10 th – 12 th May, 2010	Al-Karak, chairman of the scientific committee of the 3 rd Scientific Week of the faculty of Science, Mu'tah University.
7 th – 9 th May, 2010	Amman, Jordan, Excellence in Education, Current practices, Challeges and Future Trends.
6 th May, 2010	Amman, 6 th National workshop of the Jordanian National Committee, SESAME.
27 th Mar. 2010	organized a meeting in Amman that resulted in forming "The Network for Cooperation between German and Jordanian-German-Oriented Institutions and Associations in Jordan". A letter of support and collaboration with the Jordanian Club of Humboldt fellows was sent by HRH Princess Sumaya bint El Hassan and read at the meeting.
16 th Jan. 2010	Amman, Jordan, organized a reception patronized by HRH Princess Sumaya bint el Hassan to express gratitude to the Humboldt Jordanian University Presidents and vice presidents for distinguished service, in addition to a distinguished group of German and Jordanian personalities who served the cause of science, technolgy and friendship between Jordan and Germany.
19 th – 21 st Nov. 2009	Petra, Eighth SESAME Users Meeting.
9 th – 15 th Nov. 2009	Amman, helped in organizing and participated at the " Middle East Doctoral Student Workshop on "Communicating the Chemical sciences".
7 th Nov. 2009	Amman, the 4 th Conf. on Scientific Research in Jordan, organized by "Jordan Society for Scientific Research".
26 th – 28 th Oct. 2009	the 2 nd Int. Symposium on Nuclear Energy (ISNE-09) and chairman of session IV.
1999	Amman, member of the Council for Higher studies of Princess Sumaya University for Technology.
4 th – 8 th May, 2008	director of the 1 st scientific week for the Science Faculty of Mu'tah University.
12 th Apr. 2008	director of the Surface Science workshop organized by the JCVHF.
9 th – 15 th Apr. 2008	organized the scientific visit by Dr. Nelia Wanderka from Hein-Meitner-Institut Berlin to Mu'tah Univ and scientific institutions in Jordan.
17 th – 19 th Nov. 2007	Sixth SESAME Users Meeting.
28 th Oct. – 1 st Nov. 2007	the Jordanian 13 th Scientific Week organized by the Higher Council for Science and Technology held under the title "Scientific and Technological Parks: Building Knowledge Economy".

3 rd Sept. 2006	Mafrag, 21 st March 2007 organized the German-Jordanian Workshop titled: Cooperation between Germany and Jordan – Scholarships and Scientific Research in Germany.
27 th – 28 th Sept. 2006	the Jordanian 12 th Scientific Week organized by the Higher Council for Science and Technology.
18 th – 20 th Sept. 2005	the Jordanian 11 th Scientific Week organized by the Higher Council for Science and Technology.
21 st – 23 rd Sept. 2003	the Jordanian 10 th Scientific Week organized by the Higher Council for Science and Technology.
23 rd – 25 th Sept. 2001	the Jordanian 9 th Scientific Week organized by the Higher Council for Science and Technology.
13 th Oct. 2001	elected as an executive committee member for the national team of the Synchrotron project in Jordan (SESAME)
12 th – 18 th Sept. 1998	the 45 th International Field Emission Symposium, held at JUST
10 th Sept. 1998	Irbid, organized the International Introductory School about Field Electron, Field Ion Emission, Atom probe and Vacuum Microelectronics that was held at Jordan University of Science and Technology (JUST).
1 st – 3 rd Nov. 1997	Director of the First Conference on Materials Science CMS1, Mu'tah University
18 th – 21 st Apr. 1994	Amman, the 3 rd Int. Conference for condensed matter.
1990 - 1991	supervised the process of maintaining some vacuum equipment of the faxenes center that belong to the Ministry of Agriculture and provided a vacuum technology intensive course to the operators of the equipment
June 1991	Irbid, one-week computer course on some computer applications in physics at the "Center for theoretical Physics, Yarmouk University"
20 th – 24 th Mar. 1989	Amman, the 2 nd Int. Conference for condensed matter
28 th – 31 st Oct. 1987	Amman, Univ. of Jordan & Royal Sci. Soc. the 1 st Int. Conference for condensed matter
1987	initiating the federation agreement between the Int. Centre for theoretical physics (I.C.T.P.; Trieste, Italy) and the Physics Dept. of Mu'tah University.
24 th August – 2 nd Sept. 1986	Amman, Int. Seminar on appropriate technology in the fields of solar and wind energy applications
24 th – 26 th Mar. 1986	Amman, Int. conference about remote sensing.
1 st – 9 th Sept. 1985	Amman, the 3 rd Petra school of Physics.

Publications (latest to oldest).

Number	Publication
115	Marwan S. Mousa and Ildiko Tulbure "Physics- and technology- based approaches for human sustainability" Ecoterra, 2020, Volume 17, Issue 1.
114	Alexandr Knápek, Rashid Dallaev, Daniel Burda, Dinara Sobola, Mohammad M. Allahham, Miroslav Horáček, Pavel Kaspar, Milan Matějka, Marwan S. Mousa "Field emission properties of Polymer graphite tips prepared by membrane electrochemical etching" Nanomaterials-848538 (MDPI), 10, 1294, 1-12, 2020 Doi: 10.3390/nano10071294

113	Salah Jaradat, Marwan S. Mousa, Donald Dunn, Casey Reason "Factors Motivating Virtual Lab Simulations Adoption in Secondary School Physics Instruction in Jordan" Jo. J. Phys. Accepted for publication 25 06 2020
112	A. Al Soud, R. N. Al.Buqain, M. S. Mousa "Composite Metallic Nano Emitters Coated with a Layer of Insulator Covered by Au layer" Jo. J. Phys. V 13, No 3, 253-262, 2020
111	A. Al Soud, A. Knápek, M. S. Mousa "Analysis of the Various Effects of Coating W Tips with Dielectric Epoxy- lite 478 Resin or UPR-4 Resin Coatings under Similar Operational Conditions" Jo. J. Phys. V 13. No 3, 191-199, 2020
110	M. S. Mousa, A. Knapek, L. Grmela "Similarities and Differences between Two Researches in Field Electron Emission: A Way to Develop a More Powerful Electron Source " Jo. J. Phys. V 13, No 2, 171 – 179, 2020
109	Mohammad Allaham, Richard G. Forbes, Alexandr Knápek, Marwan S.Mousa "Implementation of the Orthodoxy test as a validity check on experimental field emission data" Journal of Electrical Engineering (De Gryter Publishing House) Vol 71, No1, 37-42 (2020). DOI:10.2478/jee-2020-0005
108	M. M. Allaham, R. G. Forbes, M. S. Mousa "Applying the Field Emission Orthodoxy Test to Murphy-Good Plots" Jo. J. Phys. V 13, No 2, 101 – 111, 2020
107	Alexandr Knápek,*, Dinara Sobola, Daniel Burda, Aleš Daňhel, Marwan Mousa and Vladimír Kolařík "Polymer graphite pencil lead as a cheap alternative for classic conductive SPM" probes, <i>Nanomaterials</i> 9, 1-12 (2019) ; doi: FOR PEER REVIEW
106	Inshad Jum'h, Marwan S. Mousa, Mahmoud Mhawish, Suhad Sbeih, Ahmad Telfah "Optical and Structural Properties of (PANI-CSA-PMMA)/NiNPs Nanocomposites Thin Films for Organic Optical Filters", <i>J. Appl. Polym. Sci.</i> 137, 1-11, 48643 (2019).
105	Marwan S. Mousa, Samer I. Daradkeh "Effect of relaxation and cooling process on field electron emission from single-walled carbon nanotube embedded in glass" Jo. J. Phys. 12,1, 87 - 96 (2019)
104	Jeremy Wiedemier, Greg Spencer, Mark J. Haggmann, Marwan. S Mousa "Simulation and analysis of methods for scanning tunneling microscopy feedback control" <i>Microscopy and Microanalysis.</i> 25, 2, 554 - 560 (2019) Published on line: 14 March 2019. Cambridge Core. https://doi.org/10.1017/S1431927619000278
103	Marwan S. Mousa, Samer I. Daradkeh, Emad S. Bani Ali "Comparative study of field electron emission from single-walled carbon nanotube and multi-walled carbon nanotube mounted on tungsten" Jo. J. Phys. 12, 1, 7 - 15 (2018)
102	M. J. Haggmann, G.R. Spencer, J. Wiedemeier, M. S Mousa "New software simulating the full operation of a scanning tunneling microscope and its application to an FPGA-based instrument" Jo. J. Phys. 12, 1, 1-5 (2019)

101	Alexandre Mayer, Marwan S. Mousa, Mark J. Hagmann, Richard G. Forbes "Numerical testing by a transfer-matrix technique of Simmons' equation for the electronic current in metal-vacuum-metal junctions " Jo. J. Phys. 12, 1, 63 – 77 (2019)
100	Samer I. Daradkeh, M.S. Mousa and R.G. Forbes "Fowler-Nordheim plot shape associated with large series resistance". 31 st Int. Vacuum Nanoelectronics Conf. Kyoto, July 2018. [PubExtendAbstr:Technical Digest, 2018 31st Intern. Vacuum Nano-electronics Conf. (IVNC). (ISBN: 978-1-5386-5715-7) (IEEE, Piscatory, NJ, 2018) pp. 122-123.]
99	Andreas Fischer, Karl L.Lorenz and Marwan S. Mousa, "Negative Field Ionization for Tetracyanoethylene on novel thin polymer cathode coating layers" J. Vac. Sci. & Technol. B, 36 (5), 1201 - 1205 (2018).
98	A. M. Al-Qudah, S. S. Alnawasreh, M. A. Madanat, O. Trzaska, D. Matykiewicz, S. S. Alrawashdeh, M. J. Hagmann, M. S. Mousa "Characterization of composite electron sources (Metal-Insulator-Vacuum" Jo. J. Phys. 11, 1, 59-68 (2018)
97	M. S Mousa, M-Ali H. Akhras, S.I. Daradkeh "Field electron emission from pyrograph III-1 carbon nanotube fibers embeded in glass" Jo. J. Phys. 11, 1, 17-25 (2018)
96	Marwan S. Mousa "Comparison between single-walled CNT, Multi-walled CNT, and carbon nanotube-fiber pyrograph III" IOP Conf. Ser.: Materials Science & Engineering, 305, 012025 (2018) Doi: 10.1088/1757-899X/305/1/012025
95	Marwan S. Mousa, Samer Daradkeh, "Field electron emission characteristics of single-walled carbon nanotube on tungsten blunt tip" IOP Conf. Ser.: Materials Science & Engineering, 305, 012022 (2018) Doi: 10.1088/1757-899X/305/1/012022
94	M.S. Mousa, E, S, Bani Ali, M.J. Hagmann "Use of tapered Pyrex capillary tubes to increase the mechanical stability of multiwall carbon nanotubes field emitters " IOP Conf. Ser.: Materials Science & Engineering, 305, 012026 (2018) Doi: 10.1088/1757-899X/305/1/012026
93	M.S. Mousa, E, S, Bani Ali, M.J. Hagmann "Use of tapered Pyrex capillary tubes to increase the mechanical stability of multiwall carbon nanotubes field emitters " IOP Conf. Ser.: Materials Science & Engineering, 305, 012026 (2018) Doi: 10.1088/1757-899X/305/1/012026
92	Marwan S Mousa, M-Ali H. Akhras, Samer Daradkeh "Study of the emission characteristics of single-walled carbon Nano-fiber pyrograf" IOP Conf. Ser.: Materials Science & Engineering, 305, 012009 (2018) Doi: 10.1088/1757-899X/305/1/012009
91	Samer Daradka, Marwan S Mousa "Switch-on Phenomena and field emission from single-walled carbon nanotubes embedded in glass Applied Microscopy, 47 (3) 86-94 (2017)

- 90 Mark J. Hagmann, Marwan S. Mousa and Dimitry A. Yarotski
"Resolution in carrier semiconductors by scanning spreading resistance microscopy and scanning frequency comb microscopy"
Applied Microscopy, 47 (3) 95-100 (2017)
- 89 Ayman M. Al-Masri, Mark J. Hagmann, Marwan S. Mousa
"Enhanced field emission from dielectric coated highly emissive carbon fibers"
Applied Microscopy, 47 (1) 55-62 (2017)
- 88 Ala'a.M. Al-Qudah, Shady S. Alnawasreh, Mazen A. Madanat, Oliwia Trzaska, Danuta Matykiewicz, Saad S. Alrawashdeh, Mark J. Hagmann, Marwan S. Mousa
"The effects of dielectric coatings on electron emission from tungsten"
Applied Microscopy, 47 (1) 36 – 42 (2017)
- 87 Mark J. Hagmann, Dimitry A. Yarotski, and Marwan S. Mousa
"Microwave frequency comb from a semiconductor in a scanning tunneling microscope"
Microscopy and Microanalysis, V 23, issue 2, 443 – 448 (2017)
- 86 A.N. Al-Rabadi, M.S. Mousa, R.F. Al-Rabadi, S. Alnawasreh, B. Altrabsheh, M.A. Madanat
"Parallel Bijective Processing of Regular Nano Systolic Grids via Carbon Field Emission"
Controlled-Switching
International Journal of Computer Science & Information Technology, 8, 3 (2016) 77-101
- 85 Shady S. Alnawasreh, Ala'a M. Al-Qudah, Mazen A. Madanat, Emad S. Bani Ali, Ayman M. Almasri, Marwan S. Mousa
"Epoxyite influence on field electron emission properties of tungsten and carbon fiber tips".
Applied Microscopy, 46, 4, 227 - 237 2016
- 84 Emad S. Bani Ali and Marwan S Mousa
"Switch-on phenomena and field emission from MWCNTs embedded in glass".
Applied Microscopy, 46, 4, 244 – 252 (2016)
- 83 S.S. Alnawasreh, A.M. Al-Qudah, M.A. Madanat, E.S. Bani Ali, A.M. Almasri, Marwan S. Mousa
"Influence of various types of dielectric epoxyite resin on field electron emission properties from the nano and micro scale tungsten and carbon fiber tips"
Materials Research Forum, Specialized publisher on Materials Sci. and Eng
V 1, 247 - 248 (2016)
- 82 M. S. Mousa, E. S. Bani Ali
"Switch-on phenomena and field electron emission from MWCNTs encapsulated in glass"
Materials Research Forum, Specialized publisher on Materials Science and Engineering. <http://www.mrforum.com/mrpseries/>
V 1, 186 - 189 (2016)
- 81 Ala'a A. Al-Qudah, Marwan S. Mousa,
"Analysis of the relationship between the distribution of a dielectric layer on a nano-tip apex and distribution of emitted electrons"
Materials Research Forum, Specialized publisher on Materials Science and Engineering <http://www.mrforum.com/mrpseries/>
2, 183 - 185 (2016)
- 80 Ala'a M. Al-Qudah, Marwan S Mousa,
"Relationship of the distribution thickness of dielectric layer on the nano-tip apex and distribution of emitted electrons"
Applied Microscopy, 46, 3 (2016) 155 - 159

- 79 Richard Forbes, Ala'a M. Al-Qudah, Shadi Alknawasreh, Mazen A. Madanat and Marwan S Mousa
"Comparisons between apex-radius values extracted from Fowler-Nordheim plots and from SEM measurements, for carbon-based emitters"
IVNC165- (2016) 1-2
- 78 Nelia Wanderka, Marwan S. Mousa, Paul Henke, Olesya Korchuganova, Debashis Mukherji, Joachim Rosler, John Banhart
"Carbides in Co-Re-Cr based high temperature alloys"
Journal of Materials Science (2016) 51:7145 - 7155
DOI 10.1007 / s10853-016-9995-3
- 77 Ala'a A. Al-Qudah, Marwan S. Mousa, A. Fischer
"Effect of insulating layer on the field electron emission performance of nano-apex metallic emitters"
Materials Science and Engineering 92, 1-8 (2015) 012021
- 76 Marwan S. Mousa, Shadi Alnawasreh, Mazen A. Madanat, Anas N. Al- Rabadi
"Investigating of the field emission performance on nano-apex carbon fiber and tungsten tips"
Materials Science and Engineering 92, 1-8 (2015) 012022
IOP C.S., doi:10.1088/1757-899X/92/1/012022
- 75 S. Alnawasreh, M.S. Mousa and A.N. Al-Rabadi
"Investigating the effects of sample conditioning on nano-apex carbon fiber tips for efficient electron emission"
Jordan J. Phys. V8, No 2, 95 -101 (2015).
- 74 M. A. Madanat, M. S. Mousa, A. N. Al-Rabadi and A. Fischer
"Electron microscopy-based performance evaluation of various tungsten field-emitter tips apex radii"
Jordan J. Phys. V 8, No 2, 97 – 85 (2015).
- 73 Richard G. Forbes, Jonathan H.B. Deane, Andreas Fischer and Marwan S. Mousa
"Fowler-Nordheim Plot Analysis: a Progress Report"
Review paper, Jordan J. Phys., V 8, No 3, 125 – 147 (2015).
arXiv: 1504. 06134v5.
- 72 Khalil O. Mussa, Marwan S. Mousa, Andreas Fischer
Information extraction from FN plots of tungsten microemitters
Ultramicroscopy, 132, 48-53 (2013).
- 71 A. Fischer, M. S. Mousa, J.H.B. Deane and R.G. Forbes
"The effect of barrier form on slope and intercept correction factors for curved emitters: development of some enabling theory"
IEEE, IVNC 26, Xplore DL 1-2, (July 2013)
doi:10.1109/IVNC.2013.6624760
- 70 Andreas Fischer, Marwan S. Mousa and Richard G. Forbes
"Influence of barrier form on the extraction of information from Fowler-Nordheim plots"
J. Vac. Sci. Technol. B 31, 032201 (2013)
- 69 Richard G. Forbes, Andreas Fischer and Marwan S. Mousa,
"Improved approach to Fowler-Nordheim plot analysis"
J. Vac. Sci. Technol. B31(2) 02B103, 1-8 (Mar/Apr 2013)
- 68 Richard G. Forbes, Andreas Fischer and Marwan S. Mousa,
"Illustrating field emission theory by using Lauritsen plots of transmission probability and barrier strength"
J. Vac. Sci. Technol. B31(2) 02B102, 1-8 (Mar/Apr 2013).

- 67 K.O. Mussa, A. Fischer and M.S. Mousa
"Characterizing a new composite material: Effect of NaOH coating of variable thickness on the properties of a tungsten microemitter"
Jordan Journal of Physics, Vol 5, No 1, 27-31 (2012).
- 66 M.S. Mousa, A. Fischer and K.O. Mussa
"Metallic and composite micropoint cathodes: Aging effect and electronic and spatial characteristics"
Jordan Journal of Physics, Vol 5, No 1, 21-26 (2012).
- 65 Anas N. Al-Rabadi, Marwan S.Mousa
"Field emission-based many-valued processing using carbon nanotube controlled switches, Part 2: Architecture Effectuation"
Facta Universitatis, Ser: Elec. Energ. Vol. 25, No 1, 15-30 (2012).
DOI: 10.2298/FUEE1201015A.
- 64 Andreas Fischer, Jonathan H. B. Deane, Marwan S Mousa, Richard G. Forbes
"Illustrating field emission theory by using plots Fowler-Nordheim plots of transmission probability and barrier strength"
IVNC25, EA IEEE Xplore DL(2012) 1-2
- 63 Richard G. Forbes, Andreas Fischer, Marwan S Mousa
"New type of intercept correction factor for Fowler-Nordheim plots"
IVNC25, EA IEEE Xplore DL(2012) 1-2
- 62 Anas N. Al-Rabadi, Marwan S. Mousa
"Field emission-based many-valued processing using carbon nanotube controlled switches, Part 1: Fundamentals"
Facta Universitatis, Ser: Elec. Energ. Vol. 25, No 1, 1-14 (2012).
DOI: 10.2298/FUEE1201001A.
- 61 M.S. Mousa, N. Wanderka, M. Timpel, S. Singh, M. Heilmaier, J. Banhart
"Modification of Mo-Si alloy structure by small additions of Zr"
Ultramicroscopy, 111, 706-710 (2011).
- 60 M.S. Mousa
"Characteristics of a high brightness gaseous field ion source employing tungsten-carbon doped NiAl needles."
Ultramicroscopy, 111, 421-425 (2011).
- 59 Anas N. Al-Rabadi and Marwan S. Mousa
"Multiple-valued computing using field emission – based carbon nanotube controlled switching "
Int. MC Eng and Comp Sci IMECS (2010) Vol II, 1176-1187.
978-988-18210-4-1.
- 58 Andreas Fischer, Marwan S. Mousa, Richard Forbes
"Influence of improved surface potential-energy model on CFE characteristics and related slope and intercept correction factors"
IVNC23, P1-27 (2010) 79
- 57 Andreas Fischer, Marwan S. Mousa, Anas N. Al-Rabadi, and Richard Forbes
"Influence of tip curvature on field electron emission characteristics"
IVNC23, P1-26 (2010) 78
- 56 M. J. Hagmann and M. S. Mousa
"Time-dependent response of field emission by single carbon nanotubes."
Jordan Journal of Physics, Vol 1, No 1, 1-8 (2008).

- 55 M. S. Mousa
"Evaluation of a neon focused field ion source: fabrication and characteristics."
Technical Digest, 19th Intern. Vacuum Nanoelectronics Conf. & 50th Intern. Field Emission Symp., Guilin, PR China, July 2006 (Eds. N.S. Xu, J. Chen, S.Z Deng) (ISBN: 1-4244-0401-0) (IEEE, Piscataway, NJ, 2006), pp 469-470. DOI: 10.1109/IVNC.2006.335271. Date Added to IEEE Xplore: 19 March (2007).
- 54 M. J. Hagmann and M. S. Mousa
"Simulation of sub-femtosecond response in laser-assisted field emission."
Ultramicroscopy, 107, 849-853 (2007).
- 53 M. J. Hagmann, D. A. Christensen, M. S. Mousa, A. S. Baturin and E. P. Sheshin
"Anomalous high-frequency oscillations in a field emission tube and their significance in pulsed field emission."
Ultramicroscopy, 107, 854-856 (2007).
- 52 M. S. Mousa
"Influence of a dielectric coating on electron emission from micropoint electron sources."
Surface Interface and Analysis, 39, 102-110 (2007).
- 51 M. J. Hagmann, M. S. Mousa, M. Brugat, E. P. Sheshin, and A. S. Baturin
Equivalent circuit for photomixing in resonant laser-assisted field emission
Proc. 14th Int. Symp. on Space Terahertz Technology, 13, 16, 478-480 (2004).
- 50 M. S. Mousa and T. F. Kelly,
"Characteristics of carbon-fiber cold field-emission tips with a dielectric coating."
Surface Interface and Analysis, 36, 444-448 (2004).
- 49 M. J. Hagmann, M. S. Mousa, M. Brugat, E. P. Sheshin, and A. S. Baturin
Large-signal and small-signal electronic equivalent circuits for a field electron emitter
Surf. Interface Anal., 36, 402-406 (2004).
- 48 A. S. Baturin, T. F. Kelly, M. S. Mousa, T. Gribb, R. Martens and E. P. Sheshin,
"Lifetime and emission stability of carbon cathodes."
Mat. Sci. & Eng. A 353, 22 - 26 (2003).
- 47 M. S. Mousa, M. J. Hagmann, M. Brugat, and E. P. Sheshin,
"Measurements of the self-sustained enhancement of field emission of carbon fiber microemitters."
Ultramicroscopy, 95, 119-124 (2003).
- 46 K. L. Lorenz and M. S. Mousa,
"Effects of hot electron emission on a low conductivity Tetracyanoethylene polymer layer including studies of the corrugation of the film surface."
Ultramicroscopy, 95, 113-117 (2003).
- 45 M. S. Mousa and T. F. Kelly,
"Stabilization of carbon-fiber cold field-emission cathodes with a dielectric coating."
Ultramicroscopy, 95, 125-130 (2003).
- 44 M. J. Hagmann, M. S. Mousa and M. Brugat,
"Design of field emitter devices for microwave and terahertz applications."
Mat. Sci. & Eng. A 353, 41 - 46 (2003).
- 43 M. K. Miller, E. A. Kenik, M. S. Mousa, K. F. Russel and A. J. Bryhan,
"Improvement in the ductility of molybdenum alloys due to grain boundary segregation."
Scripta Materialia, 46, 299-303 (2002).
- 42 M. Brugat, M. S. Mousa, E. P. Sheshin and M. Hagmann,
"Measurement of field emission current variations by an amplitude modulated laser beam."
Mat. Sci. & Eng. A327, 7-15 (2002).

- 41 A. Mayer, M. S. Mousa and J. P. Vigneron,
"Comparison between experimental and computer simulations of current-voltage (I-V) characteristics of dielectric-coated photon-stimulated field emitters."
Ultramicroscopy, 89, 95-104 (2001).
- 40 M. J. Hagmann, M. S. Mousa and M. Brugat,
"Simulations of photon-assisted tunneling using the Fokker-Planck equation to model the scattering of electrons within the emitting metal tip."
Ultramicroscopy, 89, 23-38 (2001).
- 39 M. S. Mousa, M. Brugat, M. Hagmann and E. P. Sheshin,
"Prototypes using metal, carbon fiber and composite field emission sources modulated by a laser beam."
Ultramicroscopy, 89, 129-135 (2001).
- 38 M. S. Mousa, K. Lorenz and N. S. Xu,
"In-situ observation of the transition process from cold to hot electron emission during field emission assisted vacuum deposition of polymer on W tips." Ultramicroscopy, 79, 43-49 (1999).
- 37 M. S. Mousa, M. Al Share'
"Study of the MgO-coated W emitters by field electron emission microscopy."
Ultramicroscopy, 79, 195-202 (1999).
- 36 M. S. Mousa,
"Effect of anode voltage temperature on molybdenum field emitter arrays."
Mat. Sci.& Eng. A 270 vii, 97-102 (1999).
- 35 S. Z. Deng, Z. X. Yu, N. S. Xu, M. S. Mousa and R. V. Latham,
"Stability consideration of metal-diamond-vacuum microemission regimes."
Ultramicroscopy, 79, 95-100 (1999).
- 34 M. S. Mousa, A. Hammoudeh and J. Loboda-Cackovic,
"Chemisorption of nitrogen on PdCu(110) single crystal alloy."
Vacuum, 54, 251-255 (1999).
- 33 A. Hammoudeh, M. S. Mousa and J. Loboda-Cackovic,
"Interaction of CO with clean and oxygen covered PdCu(110) single crystal alloy."
Vacuum, 54, 239-243 (1999).
- 32 M. S. Mousa,
"Influence of the applied electric field and gas on the energy spectra of electrons emitted from carbon fibre microemitters."
Ultramicroscopy, 73, 23-30 (1998).
- 31 A. Hammoudeh J. Loboda-Cackovic, M. S. Mousa and J. H. Block,
"CO chemisorption on Pd-rich surfaces of PdCu(110) : A work function change study."
Vacuum, 48, 3/4, 187-190 (1997).
- 30 M. S. Mousa, J. Loboda-Cackovic and J. H. Block,
"Thermal desorption spectroscopy analysis of oxygen from Pd-rich surfaces of PdCu(110) single crystal."
Vacuum, 48, 3/4, 375-381 (1997).
- 29 M. S. Mousa,
"Electron emission from carbon fibre tips."
Applied Surface Science, 94, 94/95, 129-135 (1996).
- 28 M. S. Mousa and Yu Suckorski,
"Cold-cathode emission from Cu-broad area electrodes overlaid by resin-ZnO composite."
Vacuum, 46, 5/6, 569-573 (1995).

- 27 J. Loboda-Cackovic, A. Hammoudeh, M. S. Mousa and J. H. Block,
"Oxidation of CO on PdCu(110) single crystal alloy catalyst: steady state, hysteresis and related surface phenomena."
Vacuum, 46, 5/6, 411-415 (1995).
- 26 M. S. Mousa, A. Hammoudeh, J. Loboda-Cackovic and J. H. Block,
"The CO-oxidation on Pd-rich surfaces of PdCu(110) : hysteresis in reaction rates."
Journal of Molecular Catalysis, A : Chemical 96, 271-276 (1995).
- 25 J. Loboda-Cackovic, M. S. Mousa and J. H. Block,
"Surface analysis of the PdCu(110) single crystal alloy at different segregation rates."
Vacuum, 46, 2, 89-96 (1995).
- 24 M. S. Mousa, J. Loboda-Cackovic and J. H. Block,
"Characterization of PdCu(110) single crystal surface compositions during CO chemisorption."
Vacuum, 46, 2, 117-125 (1995).
- 23 M. S. Mousa, J. Loboda-Cackovic, S. Jaenicke and J. H. Block,
"Adsorption and desorption of oxygen and nitrogen on PdCu(110) single crystal alloy surfaces."
Surface Science, 307-309, 401-406 (1994).
- 22 M. S. Mousa,
"Investigations of in situ carbon coating on field emitter arrays."
Vacuum, 45, 2/3, 241-244 (1994).
- 21 M. S. Mousa,
"A study of the effect of hydrogen plasma on microfabricated field-emitter arrays"
Vacuum, 45, 2/3, 235-239 (1994).
- 20 M. S. Mousa,
"Observations of a field forming process for ZnO-W cold cathodes."
Vacuum, 45, 2/3, 245-248 (1994).
- 19 M. S. Mousa, A. Karpowicz and S. Surma,
"'Switch-on' phenomena in field electron and field ion microscopy."
Vacuum, 45, 2/3, 249-254 (1994).
- 18 M. S. Mousa, C. E. Holland, I. Brodie and C. A. Spindt,
"The effect of hydrogen and acetylene processing on microfabricated field-emitter arrays."
Applied Surface Science, 67, 218-221 (1993).
- 17 M. S. Mousa, P. R. Schwoebel, I. Brodie and C. A. Spindt,
"Observations of work function changes in field-emitter arrays."
Applied Surface Science, 67, 56-58 (1993).
- 16 M. S. Mousa and D. B. Hibbert,
"Analysis of some properties of metal-glass microemitters subjected to strong electric fields."
Applied Surface Science, 67, 59-65 (1993).
- 15 M. S. Mousa and D. B. Hibbert,
"Field emission of electrons from glass tips with internal conducting coats."
J. Phys. D: Appl. Phys., 26, 697-703 (1993).
- 14 R. Madenach, G. Abend, M. S. Mousa, H. J. Kreuzer and J. H. Block,
"Influence of electrostatic fields on binding energy (NO on Rh)."
Surface Science, 266, 56 - 61 (1992).
- 13 M. S. Mousa,
"Field electron emission studies on zinc oxide coated tungsten micro- emitters."
Surface Science, 266, 110 - 120 (1992).
- 12 M. S. Mousa,
"Effect of an internally conductive coating on the electron emission from glass tips."
Surface Science, 246, 79 - 86 (1991).

11	M. S. Mousa, "A new perspective on the hot electron emission from metal-insulator microstructures." Surface Science, 231, 149 - 159, (1990).
10	M. S. Mousa, "Cold cathode field emission using both Al-resin and Au-resin coatings on tungsten substrate." Surface Science, 231, 142 - 148, (1990).
9	S. Bajic, M. S. Mousa and R. V. Latham, "Factors influencing the stability of cold-cathodes formed by coating a planar electrode with a metal-insulator composite." J. Phys. (Paris), 50, C8, 79 - 84, (1989).
8	M. S. Mousa, "Effect of lacomit films on cold-cathode hot-electron emission." J. Phys. (Paris), 49, C6, 237 - 242, (1988).
7	M. S. Mousa, "Characteristics of tungsten substrate with Al ₂ O ₃ coatings under U.H.V. conditions." Vacuum, 38, 835 - 838, (1988).
6	M. S. Mousa, "Study of field induced hot-electron emission using the composite microemitters with varying dielectric layer thickness." J. Phys. (Paris), 48, C6, 115 - 120, (1987).
5	M. S. Mousa, "Field emission from a new type of electron source." J. Phys. (Paris), 48, C6, 109 - 114, (1987).
4	M. S. Mousa and R. V. Latham, "Hot-electron emission from composite metal-insulator microemitters." J. Phys. (Paris), 47, C7, 139 - 144, (1986).
3	R. V. Latham and M. S. Mousa, "Hot electron emission from composite metal-insulator micro-point cathodes." J. Phys. D: Appl. Phys., 19, 699 - 713, (1986).
2	Marwan. S. Mousa, "A study of field electron emission from composite micro-regimes." Engineering & Applied Science, AU, B4 7ET (1984).
1	G. L. Mair, D. C. Grindrod, M. S. Mousa and R. V. Latham, "Beam-energy distribution measurements of liquid gallium field-ion sources." J. Phys. D: Appl. Phys., 16, L 209 - L213, (1983).

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