



Dr. Mohamed Almokhtar Mohamed Mahmoud

Professor (Material Science and Nanotechnology)

Faculty of Science-Assiut University, 71516 Assiut, Egypt.

*Email: almokhtar@science.au.edu.eg , Tel: +201033948933
malmokhtar00@gmail.com, +20882063127*

Researcher identifier(s):

ORCID: 0000-0001-8772-1553

Scopus ID: 6602634063

Webpages:

http://www.aun.edu.eg/arabic/membercv.php?M_ID=336

<http://scholar.google.com/citations?user=l0Vi42sAAAAJ&hl=en>

https://www.researchgate.net/profile/Mohamed_Almokhtar

Personal

Name	Mohamed Almokhtar
Gender	Male
Date and Place of Birth	27.6.1966, Assiut
citizenship	Egyptian
current residence	El-Galaa St, 71516 Assiut-Egypt
Permanent Address	Physics Department, Assiut University, Egypt
Date of writing C. V	28.01.2019

Academic Degrees

Name of degree	Ph. D.
Department / Faculty	Institute for Chemical Research, Faculty of Science
University	Kyoto University, Japan
Date awarded	January 2002
Subject	Spintronics
Thesis title	Magnetism of Cr Thin Films with ¹¹⁹ Sn Monolayers in Fe/Cr and V/Cr Multilayers
Name of degree	M. Sc
Department / Faculty	Physics Department , Faculty of Science
University	Assiut University, Egypt
Date awarded	August 1993
Subject	Ferroelectric single crystals
Thesis title	Growth and Physical Properties of Ferroelectric Pottasium Ferrocyanide Trihydrate Single Crystals
Name of degree	B. Sc.
Department / Faculty	Physics Department, Faculty of Science
University	Assiut University, Egypt
Date awarded	June 1988

Career/Affiliations

- **Full Professor** 7/2019-present
Physics Department - Assiut University-Egypt
- **Associate Professor** 2/2009 – 7/2019
Physics Department - Assiut University-Egypt

- **Assistant Professor**
Physics Department -Assiut University-Egypt 6/2002-2/2009
- **Assistant Lecturer**
Physics Department -Assiut University-Egypt 8/1993-4/1998
- **Instructor**
Physics Department -Assiut University-Egypt 1/1989-7/1993

Awards and Fellowships/Appointments

Date	Title,	Organization, Country	Subject of Research
October 95 - March 96	UNESCO, Training Fellowship,	Kyoto University (Japan).	Spintronics
Oct 1998 - March 2002	Monbusho Scholarship Ph. D. degree	Kyoto University (Japan).	Spintronics
March 2005 - Sept 2005	DFG fellowship, Guest scientist,	Max-Planck Institute (Germany).	Spin dynamics
July 08 - Sept. 08	Invited Associate Professor,	Osaka University (Japan).	Spintronics and quantum structures
Oct. 09 - Jan.2010	Invited Associate Professor,	Osaka University (Japan).	Spintronics and quantum structures
Oct. 10 - July.2011	Specially appointed Associate Professor,	Osaka University (Japan).	Nanophotonics
Sept. 2012	Invited Associate Professor,	Osaka University (Japan).	Nanophotonics
Nov. 2012 - Aug. 2013	JSPS Invited Research Scholar	Japan Society for the Promotion of Science (JSPS) Hokkaido Univ. (Japan).	Nanophotonics and Quantum Optics
May 2015 – July 2015	Invited Researcher	Materials Science Institute, University of Valencia (Spain)	Raman Scattering on GaN nanorods
Sept. 2015 – Dec 2015	Invited Researcher	Osaka University (Japan)	Graphene quantum sensors
July 2016 – Oct. 2016	Invited Researcher	Osaka University (Japan)	Graphene quantum sensors
June 2017 – March 2018	JSPS Invited Research Scholar	Osaka University (Japan)	Graphene quantum sensors

(4) Personal skills and competences

The candidate has conducted research on different topics during his scientific career related mainly to functional materials which can be candidates for potential applications in highly ranked laboratories in Japan, Germany and Spain through Invitations and awarded fellowships as follows:

- 1. Ferroelectrics:** M. Sc. course at Assiut university, Egypt.
- 2. Spintronics - Mossbauer Spectroscopy:** through a Monbusho Scholarship for a Ph.D. program (April 1998 – January 2002) at Kyoto University.
- 3. Spin dynamics:** Through a DFG Fellowship at Max Planck Institute, Stuttgart, Germany (March 2005 – June 2005).
- 4. Nanophotonics:** Through a collaboration with Prof. Hajime Asahi at the Institute of Scientific and Industrial Research, Osaka university (June 2008 – September 2008, October 2010 – July 2011).
- 5. Quantum Communication:** The coupling of single nitrogen-vacancy (NV) centers in nanodiamonds with tapered fibers through a JSPS Invitation Fellowship program, a collaboration with Prof. Shige Takeuchi (November 2012 – August 2013).
- 6. Raman Spectroscopy:** on GaN nanorods at the Materials Science Institute, University of Valencia (Spain) through a collaboration with Prof. Andres Cantarero (June 2015 – July 2015).
- 7. Graphene:** Superconductor/Graphene hybrid nanodevice in addition to research on Graphene/Ag nanoparticles through an invitation to the Institute of Scientific and Industrial Research at Osaka university, a collaboration with Prof. Kazuhiko Matsumoto and a JSPS Invitation Fellowship (June 2017 – March 2018).

Some Representative publications:

Article	IF
Isotopic heft on the B ₁₁ silent mode in ultra-narrow gallium nitride nanowires Nano Lett. 18, 5091-5097 (2018)	12.08
Numerical simulations of nanodiamond nitrogen vacancy centers coupled with tapered optical fibers as hybrid quantum nanophotonic devices Optics Express 22, 20045 (2014)	3.56
Photoluminescence from Gd ³⁺ :N-Vacancy Complex in GaGdN Multi-Quantum Wells J. Alloys and Compounds 628, 401 (2015)	3.78
Photoluminescence from Exciton-Polarons in GaGdN/AlGaN Multiquantum Wells J. Phys.: Condens. Matter 23, 325802 (2011).	2.7
Reduction and Reorientation of Cr Magnetic Moments in Fe/Cr Multilayers observed by ¹¹⁹ Sn Mössbauer Probe Phys. Rev. B 66, 134401 (2002)	3.84
Reduction and Reorientation of Cr Magnetic Moments in Fe/Cr Multilayers observed by ¹¹⁹ Sn Mössbauer Probe Phys. Rev. B 66, 134401 (2002)	3.84

Reduction of magnetic moments in very thin Cr layers of Fe/Cr multilayers: evidence from ^{119}Sn Mössbauer spectroscopy Phys. Rev. Lett. 84, 2243 (2000)	9.23
Magnetism of Cr in V/Cr multilayers studied by ^{119}Sn Mössbauer spectroscopy J. Phys. condens. matter. 12, 9247 (2000)	2.7

List of Publications in International Journals :

- 1. Isotopic heft on the B_{11} silent mode in ultra-narrow gallium nitride nanowires**
C Rodríguez-Fernández, M. Almokhtar, W Ibarra-Hernández, Mauricio Morais de Lima Jr., Aldo H. Romero, Hajime Asahi, and Andrés Cantarero,
Nano Lett. 18, 5091-5097 (2018) (IF 12.08).
- 2. Quantum regime in the Cherenkov effect and the graphene surface plasmons**
Hesham Fares, Mohamed Almokhtar,
Phys. Lett. A 383, 1005-1010 (2019).
- 3. Synthesis, structural, optical, and magnetic properties of $\text{ZnCr}_{2-x}\text{Fe}_x\text{O}_4$ ($0 \leq x \leq 0.8$) nanoparticles**
AA El-Fadl, M Almokhtar, AM Nashaat
Japanese Journal of Applied Physics 57 (7), 075001 (2018).
- 4. Effect of Mn doping on structural, optical and magnetic properties of CdS diluted magnetic semiconductor nanoparticles**
A. A. Gaddala, M. Almokhtar, A. Abu Elkair
Chalcogenide Letters **15** (No. 4), 207 – 218 9 (2018).
- 5. Fiber-Coupled Diamond Micro-Waveguides toward an Efficient Quantum Interface for Spin Defect Centers**
Masazumi Fujiwara, Oliver Neitzke, Tim Schröder, Andreas W. Schell, Janik Wolters, Jiabao Zheng, Sara Mouradian, Mohamed Almokhtar, Shigeki Takeuchi, Dirk Englund, and Oliver Benson,
ACS Omega **2** (10), 7194-7202 (2017).
- 6. Zero-bias conductance anomaly in graphene dots**
Y Kanai, M Almokhtar, T Ono, Y Ohno, K Maehashi, K Inoue, K Matsumoto
Japanese Journal of Applied Physics 56 (6S1), 06GE07 (2017).
- 7. Photoluminescence from Gd^{3+} :N-Vacancy Complex in GaGdN Multi-Quantum Wells**
Mohamed Almokhtar, Shuichi Emura, Akihiro Kiode, Takashi Fujikawa, and Hajime Asahi,
J. Alloys and Compounds 628, 401 (2015).
- 8. Optical Characterization of (TMA) 2ZnCl_4 Single Crystals in the Normal Phase**
AA El-Fadl, M Almokhtar and AM Nashaat,
Open Journal of Applied Sciences **5** (04), 169 (2015).
- 9. Numerical simulations of nanodiamond nitrogen vacancy centers coupled with tapered optical fibers as hybrid quantum nanophotonic devices**
Mohamed Almokhtar, Masazumi Fujiwara, Hideaki Takashima and Shigeki Takeuchi,
Optics Express 22, 20045 (2014).
- 10. Temperature Dependence of Resonant Peaks from Quantum Disk of GaN,**
M. Almokhtar, M. Kimura, S. Emura, and H. Asahi,
JPS Conf. Proc. **1**, 012090 (2014).
- 11. Structural and Optical Characterization of GaN/AlGaN Single Quantum Disk Nanorods**
M. Almokhtar, S. Emura, H. Tambo, S. Hasegawa and H. Asahi,

- 12. Observation of large Zeeman splitting in GaGdN/AlGaN ferromagnetic semiconductor double quantum well superlattices**
YiKai Zhou, Mohamed Almokhtar, Hitoshi Kubo, Nobuya Moi, Shuichi Emura, Shigehiko Hasegawa and Hajime Asahi,
Solid State Commun., **152** (14), pp.1270-1273 (2012).
- 13. Structural, magnetic and optical study of ultrathin GaGdN/AlGaN multi-quantum well structure**
M. Almokhtar, S. Emura, Y. K. Zhou, S. Hasegawa and H. Asahi,
Phys. Status Solidi C **9**, No. 3–4, 737–740 (2012).
- 14. Transport properties of Aluminum-Doped Zinc Oxide Thin Films**
M. M. Abd El-Raheem, A. M. A. Amrya, M. Al-Mokhtar, M. Al-Jalalia, A. Amina, H. E. A. El-Sayed, H. H. Al-Ofi,
Advances in Materials and Corrosion **1**, 30-35 (2012)
- 15. Photoluminescence from Exciton-Polarons in GaGdN/AlGaN Multi-quantum Wells**
M. Almokhtar, S. Emura, Y. K. Zhou, S. Hasegawa and H. Asahi,
J. Phys.: Condens. Matter **23**, 325802 (2011).
- 16. Exchange charge model calculations of crystal field parameters and crystal field energy levels for $[N(CH_3)_4]_2CoCl_4$ and $[N(CH_3)_4]_2MnCl_4$ single crystals**
M. G. Brik, A. El-Korashy, M. Almokhtar,
J. Alloys and Compounds **495**, 71 (2008).
- 17. An estimation of the magnetic disorder at the Fe/Cr interfaces in coupled and non-coupled Fe/Cr multilayers.**
M. Almokhtar,
J. Magn. Magn. Mater. **316**, 40-42 (2007).
- 18. Polarized neutron reflectivity studies on Fe/Cr/S/Cr multilayer**
D. Lott, M. Almokhtar, A. Schreyer
GMBH Publications GKSS 4, 117 (2006)
- 19. Magnetic frustration of Cr at Fe(011)/Cr interfaces investigated by ^{119}Sn Mössbauer probe.**
N. Jiko, M. Almokhtar, K. Mibu and T. Shinjo,
J. Phys. condens. matt. **17**(15), 2477 (2005).
- 20. Modifications of the spin density wave of Cr in Fe/Cr multilayers by insertion of Sn studied by neutron diffraction.**
D. Lott, D. Solina, M. Almokhtar, K. Mibu, W. Schmidt and A. Schreyer,
Physica B **350**, e245-e248 (2004).
- 21. Growth-orientation dependence of magnetic properties of Cr-based multilayers with ^{119}Sn monatomic layers.**
N. Jiko, M. Almokhtar, T. Shinjo, M. Takeda, J. Suzuki and K. Mibu,
J. Magn. Magn. Mater. **272-276**, 1233-1234 (2004).
- 22. Mössbauer study of magnetism of Rh layers in Ag(001)/Rh/Sn/Rh superlattice structures.**
M. Almokhtar, K. Mibu and T. Shinjo,
J. Magn. Magn. Mater. **272-276**, e813-e815 (2004).
- 23. Phase analysis study of Cu ferrite aluminates by x-ray diffraction and Mössbauer spectroscopy.**
M. Almokhtar, Atef M. Abdalla and M. A. Gaffar,
J. Magn. Magn. Mater. **272-276**, 2216-2218 (2004).
- 24. Reduction and Reorientation of Cr Magnetic Moments in Fe/Cr Multilayers observed by ^{119}Sn Mössbauer Probe.**

M. Almokhtar, K. Mibu, and T. Shinjo,
Phys. Rev. B **66**, 134401 (2002).

- 25. Structures of Submonatomic Sn layers in Fe/Cr(Sn)Cr magnetic multilayers determined by anomalous X-ray scattering.**
K. Ishiji, H. Okuda, H. Hashizume, M. Almokhtar and N. Hosoiito,
Phys. Rev. B **66**, 014443 (2002).
- 26. Magnetic properties of Cr layers in X/Cr/Sn/Cr multilayers (X= V, Fe, Ag) studied through ^{119}Sn Mössbauer spectroscopy.**
K. Mibu, M. Almokhtar, A. Nakanishi, T. Kobayashi and T. Shinjo,
J. Magn. Magn. Mater., **226-230**, 1785 (2001).
- 27. Reduction of magnetic moments in very thin Cr layers of Fe/Cr multilayers: evidence from ^{119}Sn Mössbauer spectroscopy.**
K. Mibu, M. Almokhtar, S. Tanaka, A. Nakanishi, T. Kobayashi and T. Shinjo,
Phys. Rev. Lett. **84**, 2243 (2000).
- 28. Magnetism of Cr in V/Cr multilayers studied by ^{119}Sn Mössbauer spectroscopy.**
M. Almokhtar, K. Mibu, A. Nakanishi, T. Kobayashi and T. Shinjo,
J. Phys. condens. matter. **12**, 9247 (2000).
- 29. Magnetism of ultrathin Cr layers and Fe/Cr multilayers studied by ^{119}Sn probes.**
K. Mibu, S. Tanaka, M. Almokhtar, A. Nakanishi, T. Kobayashi and T. Shinjo,
Hyper. Inter. **126**, 367 (2000).
- 30. The effect of thermal recycling on the metastable structure of potassium ferrocyanide single crystals.**
M. A. Gaffar, A. El-Korashy, Atef M. Abdalla and M. Almokhtar,
Physica B **193**, 277-283 (1994).

Presentations in International conferences

1. Crop up of the B11 mode in high quality GaN nanowires due to isotopic disorder
A Cantarero, C Rodriguez-Fernandez, M Almokhtar, W Ibarra-Hernandez
APS March Meeting 2019, March 4–8, 2019; Boston, Massachusetts
Bulletin of the American Physical Society
2. Spin Transport in Ni/Graphene quantum device under in-plane magnetic field
M. Almokhtar, Y. Kanai, T. Ono, A. Oiwa, K. Matsumoto,
The 65th JSAP Spring Meeting, March 17-20 (2018), Waseda Univ., Tokyo, Japan
3. On oscillatory structures hanging on main photoluminescence from fine GaN nanorods
M. Almokhtar and S. Emura
[32nd International Conference on the Physics of Semiconductors, Aug. 10-15, Austin Texas, USA](#)
4. High efficient coupling of NV centers to tapered nanofiber waveguide,
M. Almokhtar, M. Fujiwara and S. Takeuchi
Quantum Information Technology Conference, May 27-28, 2013, Hokkaido, Japan
5. Characterization of GaN/AlGaIn single quantum disk nanorods
M. Almokhtar, K. Tambo, S. Emura, D. Krishnamurthy , S. Hasegawa and H. Asahi
International Advances in Applied Physics & Materials Science Congress, April 26-29, 2012, Antalya, Turkey
6. InGa(Gd)N/GaN MQDisks on GaN Nanorods: MBE Growth and Properties
D. Krishnamurthy, M. Almokhtar, K.M. Kim, M. Uenaka, S. Emura, S. Hasegawa and H. Asahi
Japan Society of Applied Physics, March 15-18, 2012, Tokyo, Japan

7. Structural, magnetic and optical study of ultrathin GaGdN/AlGaIn multi-quantum well structure
M. Almokhtar, S. Emura, Y. K. Zhou, S. Hasegawa and H. Asahi
International Conference on Nitride Semiconductors ICNS09, July (10-15/2011), Glasgow, England
8. Mössbauer study of magnetism of Rh layers in Ag(001)/Rh/Sn/Rh superlattice structures.
M. Almokhtar, K. Mibu and T. Shinjo
International Conference on Magnetism ICM03, July 27-Aug. 1 (2003), Rome, Italy
9. Commensurate antiferromagnetic structure of Cr in Fe/Cr multilayers, Mössbauer study.
M. Almokhtar, K. Mibu, A. Nakanishi, T. Kobayashi and T. Shinjo
The Forth International Symposium on Metallic Multilayers, MML 01, June 24-29 2001, Aachen, Germany
10. Magnetism of thin Cr films in V/Cr multilayers.
M. Almokhtar, K. Mibu, and T. Shinjo
International Symposium on Nanoscale Magnetism and Transport, ISNMT 2000, March 8-10, 2000, Sendai, Japan

International Collaboration and Projects:

- **Japan-Egypt Collaboration:**

The applicant has established an Agreement on Academic Exchange between Faculty of Science, Assiut University and Nanoscience and Nanotechnology center, The Institute of Scientific and Industrial Research, Osaka University starting from April 2011.

- **NANOTHERM project funded by European Union**

A collaboration with "The group of Spectroscopy of Solids at Valencia University, Spain (Prof. Andres Cantarero)": Tailoring electronic and phononic properties of nanomaterials: Towards ideal thermoelectricity

Memberships in Scientific Societies

- The Japan Society of Applied Physics
- The International Union of Crystallography, IUCr

References:

- ❖ Prof. Teruya Shinjo
 Nanospintronics lab., The Institute of Chemical Research, Kyoto University, Gokasho Uji-city, Kyoto 611-0011, Japan
- ❖ Prof. Hajime Asahi
 Nanomaterials Center, The Institute of Scientific and Industrial Research, Osaka University, 8-1 Mihoga-oka, Ibaraki, Osaka 567-0047, Japan
- ❖ Prof. Andres Cantarero,
 Materials Science Institute, University of Valencia,
 PO Box 22085, 46071 Valencia, Spain.