

CURRICULUM VITAE

RESUME

Khulud Habanjar

Ph.D. graduate, Materials Science, Department of Physics, Faculty of Science, Beirut Arab University, Beirut, Lebanon

Date of Birth: June 12th 1991 Nationality: Lebanese Gender: Female

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k.habanjar@bau.edu.lb

EDUCATION

Ph.D. in Physics, Materials Science (Feb 2016 – May 2019), “CGPA: 3.89/4”, Beirut Arab University (BAU), Lebanon

M.Sc. in Physics, Nanotechnology (Sep 2012 - Aug 2015), “CGPA: 3.75/4”, BAU, Lebanon

B.Sc. in Physics (Sep 2008 - June 2012), “CGPA: 3.1/4”, BAU, Lebanon

Lebanese Baccalaureate in General Sciences (June 2008), College Universel, Lebanon

AWARDS

Doctoral Fellowship (Feb 2016), the National Council for Scientific Research of Lebanon (CNRS- L)

Doctoral Scholarship (Feb 2016), BAU, Lebanon

Best Poster Prize in the international conference Frontiers in Theoretical and Applied Physics, UAE 2017 (FTAPS 2017)

TEACHING & WORK EXPERIENCE

Classical Physics (Fall 2025-2026) - 1st year Engineering students, BAU, Lebanon

Electrodynamics (Fall 2025-2026) – 3rd year Physics Students, BAU, Lebanon

Relativity (Fall 2025-2026) – 3rd year Physics Students, BAU, Lebanon

Materials and Heat (Fall 2025-2026) – 1st year Engineering students, BAU, Lebanon

Superconductivity and Superfluidity (Fall 2025 – 2026) - PhD program, BAU, Lebanon

Selected topics in Materials Science (Fall 2025-2026), Master program, BAU, Lebanon

Materials and Heat (Spring 2024-2025) – 1st year Engineering students, BAU, Lebanon

Solid State Physics (Spring 2024-2025) – 3rd year students, BAU, Lebanon

Electromagnetic Theory (Spring 2024-2025), 2nd year Physics students, BAU, Lebanon

Advanced Condensed Matter (Spring 2024 – 2025), PhD program, BAU, Lebanon

Statistical Physics (Spring 2024-2025), 3rd year Physics Students, BAU, Lebanon

Electrodynamics (Fall 2024-2025) – 3rd year Physics Students, BAU, Lebanon

Relativity (Fall 2024-2025) – 3rd year Physics Students, BAU, Lebanon

Materials and Heat (Fall 2024-2025) – 1st year Engineering students, BAU, Lebanon

Superconductivity and Superfluidity (Fall 2024 – 2025) - PhD program, BAU, Lebanon

Electrodynamics (Fall 2023-2024) – 3rd year Physics Students, BAU, Lebanon

Relativity (Fall 2023-2024) – 3rd year Physics Students, BAU, Lebanon

Laser and its applications (Fall 2023-2024) – 3rd year Physics Students, BAU, Lebanon

Materials and Heat (Fall 2023-2024) – 1st year Engineering students, BAU, Lebanon

Selected topics in Materials science (Fall 2023-2024) – Masters students, BAU, Lebanon

Work Ready Now (Spring 2022-2023) – University Elective, BAU, Lebanon

General physics (Spring 2022-2023), 1st year Science students, BAU, Lebanon

Electromagnetic Theory (Spring 2022-2023), 2nd year Physics students, BAU, Lebanon

Statistical Physics (Spring 2022-2023), 3rd year Physics Students, BAU, Lebanon

Selected topics in Nanotechnology (Spring 2022-2023), Masters Students, BAU, Lebanon

General physics (Spring 2021-2022), 1st year Science students, BAU, Lebanon

Electromagnetic Theory- PHYS346 (Spring 2021-2022), 2nd year Physics students, BAU, Lebanon

Quantum Mechanics I-PHYS342 (Spring 2021-2022), 2nd year Physics students, BAU, Lebanon

Statistical Physics-PHYS446 (Spring 2021-2022), 3rd year Physics Students, BAU, Lebanon

Many Body Physics-PHYS 719, (Spring 2021-2022), PhD Physics Students, BAU, Lebanon

Selected topics in nanotechnology (Spring 2021-2022), Master students, BAU, Lebanon

Quantum Mechanics II (Fall 2021-2022), 3rd year Physics Students, BAU, Lebanon

Laser and its applications (Fall 2021-2022), 3rd year Physics Students, BAU, Lebanon

Biophysics (Fall 2021-2022), 2nd year Physics and Biology students, BAU, Lebanon

Relativity (Fall 2021-2022), 3RD YEAR Physics Students, BAU, Lebanon

Selected topics in Materials Science (Fall 2021-2022), Master Students, BAU, Lebanon

Selected Topics in Nanoscience and Technology-PHYS670 (Spring 2020-2021), Master students, BAU, Lebanon

Statistical Physics-PHYS446 (Spring 2020-2021), 3rd year Physics students, BAU, Lebanon

General Physics -PHYS243 (Spring 2020-2021), 1st year Science students, BAU, Lebanon

Selected Topics in Nanoscience and Technology-PHYS670 (Spring 2019-2020), Master students, BAU, Lebanon

Statistical Physics-PHYS446 (Spring 2019-2020), 3RD year Physics students, BAU, Lebanon

General Physics -PHYS243 (Spring 2019-2020), 1st year Science students, BAU, Lebanon

General Physics -PHYS243 (Fall 2019-2020), 1st year Science students, BAU, Lebanon

Principles of Physics -PHYS 241 (Spring 2017-2018, Spring 2016-2017), 1st Year Science students, BAU, Lebanon

Physics for Life Science - (Spring 2017-2018, Spring 2016-2017), 1st Year Science students, BAU, Lebanon

Introduction to Physics II – PHYS 120 (Fall 2019-2020, Fall 2015-2016, Spring 2016-2017), 1st year Engineering and Science students, BAU, Lebanon

Biophysics (Spring 2016-2017), 4th year Biology students, BAU, Lebanon

Solid State Laboratory (Spring 2014-2015), 4th year Physics students, BAU, Lebanon

Nuclear Physics (Fall 2013-2014), 3rd year Physics students, BAU, Lebanon

Classical Mechanics Laboratory (Spring 2013-2014), 2nd year Physics students, BAU, Lebanon

Principles of Physics Laboratory - (Spring 2013-2014), 1st year Science students, BAU, Lebanon

Physics for Life Science Laboratory - (Spring 2013-2014), 1st year Biology students, BAU, Lebanon

Physics Teacher – (2013-2014), Grade 7-8, Global International School, Chouf, Lebanon

Physics Teacher- (2012-2013), Grade 8 and 9, College Notre Dame des Soeurs Salvatoriennes, Chouf, Lebanon

SUPERVISION of Ms.c. and Ph.D. STUDENTS

2023-2024

Name of the student (Ph.D): Dima Dasuki

Title of the thesis: Preparation of different oxide/ferrite nanocomposites for different applications

Name of the student (Ph.D): Mohamad Shaib

Title of the thesis: Preparation of Nano/Superconductor/Polymer composite for Nuclear Radiation Shielding

Name of the student (Ph.D): Alaa Abdallah

Title of the thesis: Investigation of the Electrical and Magnetic Properties of Citrate Combusted Garnet Ferrites Dopped with Different Ions

Name of the student (Ph.D): Wafic Labban

Title of the thesis: Electromagnetic properties of nanocomposites

Name of the student (Ph.D): Sajeda Rmeid

Title of the thesis: Preparation and characterization of nano -Ferrite for different applications

2022-2023

Name of the student. (Ms.c) : Bassel Aoun

Title of the thesis: Study on the effect of adding MgO and MgFe₂O₄ nanoparticles on (Bi, Pb)-2223 superconductor

2020-2021

Name of the student (Ph.D.): Majed Sharrouf

Title of the thesis: Preparation of nano composite materials for waste water treatment Supervisors: Prof. Ramadan Awad and Dr. Khulud Habanjar

Name of the student (Ph.D.): Hani Korek

Title of the thesis: Preparation and characterization of nano ferrite samples for gas sensor applications Supervisors: Prof. Ramadan Awad and Dr. Khulud Habanjar

Name of the student (Ms.c.): Aya Youness

Title of the thesis: Superconductivity investigations of (Bi,Pb)-2212 with graphene oxide addition Supervisors: Prof. Ramadan Awad and Dr. Khulud Habanjar

Name of the student (Ms.c.): Maha Adnan Kabbani

Title of the thesis: Structural, optical and magnetic properties of Zinc Oxide nanoparticles co- doped with Yttrium and Neodymium, and study of their antibacterial activity Supervisors: Prof. Ramadan Awad and Dr. Khulud Habanjar

2019-2020:

Name of the student (Ms.c.): Mohammad Al Mousawi

Title of the thesis: Investigation of Structural, Optical and Magnetic Properties of Co-Doped (Co and Sm)-Doped ZnO nanostructures Supervisors: Prof. Ramadan Awad and Dr. Khulud Habanjar

PUBLICATIONS

- 1) Heat Treatment Effects on Structural-Magnetic Properties and Congo Red Adsorption Performance of $\text{Sn}_{0.5}\text{Ni}_{0.3}\text{Mn}_{0.2}\text{Fe}_2\text{O}_4$ Nanoferrites
W Labban, K Habanjar, A Aridi, M Noun, R Awad
Chemistry Africa, 1-31
- 2) Impact of various dopants (X = Zn, Mg, and Bi) on the structural, optical, and adsorption properties of $(\text{Co}_{0.8}\text{Ni}_{0.1}\text{X}_{0.1})_3\text{O}_4$ nanostructures
A Khalaf, A Aridi, D Dasuki, M Elkady, K Habanjar, GM El-Subruiti, ...
Scientific Reports 15 (1), 26326
- 3) Revealing the Impact of (Gd, Cr) co-doping in Yttrium Iron Garnets Derived by Citrate Auto-Combustion Method
AM Abdallah, M Noun, K Habanjar, RS Hassan, N Yaacoub, B Nsouli, ...
Journal of Alloys and Compounds, 183115
- 4) Exploring the influence of heat treatment duration and temperature on the properties and adsorption performance of $\text{Sn}_{0.5}\text{Ni}_{0.3}\text{Mn}_{0.2}\text{Fe}_2\text{O}_4$ nanoparticles
W Labban, A Aridi, K Habanjar, R Awad
Environmental Science and Pollution Research, 1-20
- 5) The impact of calcination times and Pb substitution on the physical properties of $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Fe}_{12}\text{O}_{19}$ nanoparticles
W Labban, K Habanjar, M Noun, R Awad
Physica Scripta 100 (6), 065942

- 6) Identification of the Structural Characteristics, Optical Properties, and Adsorption Performance of Bi and Sn co-doped $\text{Co}_0.5\text{Zn}_0.5\text{Fe}_2\text{O}_4$ Nanoparticles
S Rmeid, A Aridi, K Habanjar, SG Elsharkawy, R Awad
South African Journal of Chemical Engineering
- 7) The effect of rare earth Ce and Sm doping on the structure and magnetic properties of $(\text{Y}_2.5\text{Ce}_0.5\text{Fe}_5\text{O}_{12})_{1-x}/(\text{Mg}_0.95\text{Sm}_0.05\text{O})_x$ nanocomposites
K Habanjar, M Sharrouf, R Awad
Physica Scripta 2025
- 8) Mechanical properties of $(\text{Ba}_{0.4}\text{Sr}_{0.4}\text{Ca}_{0.2}\text{Fe}_{12}\text{O}_{19})_x/(\text{Bi}_{1.6}, \text{Pb}_{0.4})$ -2223 composite impacted in seawater
M Matar, A Najem, K Habanjar, M Anas, R Awad
Applied Physics A 131 (2), 1102025
- 9) Structural, Optical, and Magnetic Characteristics of $(\text{Zn}_0.5\text{Ni}_0.5\text{Fe}_2\text{O}_4)_0.5 (\text{Ba}_0.4\text{Sr}_0.4\text{Ca}_0.2\text{Fe}_{12}\text{O}_{19})_0.5$ Nanocomposite Synthesized by the Ball-Milling Assisted Co ...
A Najem, K Habanjar, R Awad, M Matar
Journal of Superconductivity and Novel Magnetism 38 (1), 1-192025
- 10) Removal of radioactive Co (II) and Sr (II) using $(\text{Co}_0.5\text{Zn}_0.5\text{Fe}_2\text{O}_4)$ nanoparticles co-doped with barium and antimony
S Rmeid, A Aridi, K Habanjar, EMA Rahman, WF Khalil, GM El-Subruiti, ...
Ceramics International 51 (4), 4593-461212025
- 11) Adsorptive performance of bismuth-doped Ni-Zn-Co ferrite nanoparticles for the removal of methylene blue dye
D Dasuki, A Aridi, M Elkady, K Habanjar, GM El-Subruiti, R Awad
Environmental Science and Pollution Research 32 (1), 23-422025
- 12) Influence of Mg-doped $\text{Ni}_{0.33}\text{Zn}_{0.33}\text{Co}_{0.33}\text{Fe}_2\text{O}_4$ Nanoparticles on the Methylene Blue Adsorption Efficiency Under Various Operational Parameters
D Dasuki, A Aridi, M Elkady, K Habanjar, GM El-Subruiti, R Awad
Water, Air, & Soil Pollution 235 (11), 7332024
- 13) Synthesis, characterization, and gas-sensing application of $\text{Cd}_0.5\text{Zn}_0.5\text{Nd}_x\text{Fe}_{2-x}\text{O}_4$ nanoparticles
H Korek, K Habanjar, SG Elsharkawy, R Awad
Materials Research Express 11 (8), 085008
- 14) Superconductivity investigation of (Bi, Pb)-2223 added with different nanoferrites and their composites
A Najem, K Habanjar, R Awad, M Anas, M Matar
Physica Scripta 99 (9), 0959492024
- 15) Synthesis, Characterization, and Gas-sensing Application of $\text{Cd}_0.5\text{Zn}_0.5\text{Nd}_x\text{Fe}_{2-x}\text{O}_4$ nanoparticles
H Korek, K Habanjar, SG Elsharkawy, R Awad

- 16) CoFe₂O₄/Mg_{0.9}Ni_{0.1}O Nanocomposites with Potential Application in Adsorption: Synthesis, Characterization and Malachite Green Removal
M Sharrouf, A Aridi, K Habanjar, D Naoufal, R Awad
Water, Air, & Soil Pollution 235 (6), 1-22 2024
- 17) Alteration of magnetic behavior of (Mg_{0.9}Ni_{0.1}O)_x/(CoFe₂O₄)_{1-x} nanocomposites
M Sharrouf, R Awad, K Habanjar
Journal of Nanoparticle Research 26 (5), 96 2024
- 18) Structural, cation distribution, mechanical, and optical properties of rare-earth doped cadmium zinc ferrites
H Korek, K Habanjar, R Awad
Applied Physics A 130 (5), 1-221 2024
- 19) Influence of samarium on the structural, magnetic, and gas sensing performance of cadmium zinc ferrites
H Korek, K Habanjar, R Awad
Physica Scripta 99 (3), 0359102 2024
- 20) Physical properties of the (Tl, Hg)-1223 superconductor phase substituted by lanthanum and samarium fluorides
RF Khattar, K Habanjar, R Awad, M Anas
Applied Physics A 130 (2), 1291 2024
- 21) Property alteration of (Bi, Pb)-2212 superconductors added with graphene oxide nanoparticles
K Habanjar, A Younes, W Labban, R Awad
Journal of Materials Science: Materials in Electronics 34 (36), 22751 2023
- 22) Effect of growth and calcination temperatures on the optical properties of ruthenium-doped ZnO nanoparticles
D Dasuki, K Habanjar, R Awad
Condensed Matter 8 (4), 102, 2023
- 23) Investigation of the structural, morphological and magnetic properties of barium hexaferrite added with magnesium oxide nanoparticles
Majed Sharrouf, R Awad, Khulud Habanjar
Applied Physics A (2023)
- 24) Superconducting and Mechanical Properties of the Tl_{0.8}Hg_{0.2}Ba₂Ca₂Cu₃O_{9-δ} Superconductor Phase Substituted by Lanthanum and Samarium Fluorides
RF Khattar, M Anas, R Awad, K Habanjar
Journal of Condensed Matter (2023)
- 25) THE ALTERATION OF MECHANICAL BEHAVIOR FOR Ba_{0.5}Sr_{0.5}Fe₁₂O₁₉/(Ni_{0.5}Zn_{0.5}) Fe₂O₄ NANOCOMPOSITES
M YASSINE, N EL GHOUGH, AM ABDALLAH, K HABANJAR, R AWAD
Journal of Engineering Science and Technology (2023)

- 26) Investigation of the structural and the physical properties of ZnO–NiO–Mn₂O₃nanocomposites for photocatalytic applications
L Wehbi, M Noun, K Habanjar, R Awad
Applied Physics A (2023)
- 27) Comparative Study of Structural, Electrical, and Mechanical Properties of (Tl, Hg)-1223 High Temperature Superconducting Phase Substituted by Lead Oxide and Lead Dioxide
RF Khattar, K Habanjar, R Awad, M Anas
Journal of Low Temperature Physics (2023)
- 28) Optical and Magnetic Behaviors of Ru-Doped ZnO Nanoparticles
K Habanjar, D Dasuki, R Awad, M Rekaby
Journal of Superconductivity and Novel Magnetism (2022)
- 29) Structure and magnetic investigation of hard/soft Ba_{0.5}Sr_{0.5}Fe₁₂O₁₉/x (Ni_{0.5}Zn_{0.5}) Fe₂O₄ nanocomposite
M Yassine, N El Ghouch, AM Abdallah, K Habanjar, R Awad
Journal of Alloys and Compounds (2022)
- 30) Exchange spring behaviour in BaFe₁₂O₁₉/CoFe₂O₄ magnetic nanocomposites
L Rifai, F Fattouh, K Habanjar, N Yaacoub, R Awad
Journal of Alloys and Compounds (2021)
- 31) Structural and magnetic properties of hard-soft BaFe₁₂O₁₉/(Zn_{0.5}Co_{0.5}) Fe₂O₄ ferrites
F Fattouh, L Rifai, K Habanjar, AM Abdallah, RS Hassan, N Yaacoub, ...
Journal of Physics: Condensed Matter (2021)
- 32) Comparative study on the effect of adding two transition-metal-substituted polyoxometalates on the mechanical properties of the (Bi, Pb)-2223 superconducting phase
N El Ghouch, R Al-Oweini, K Habanjar, R Awad
Journal of Physics and Chemistry of Solids (2021)
- 33) PHYSICAL AND MAGNETIC PROPERTIES OF NANOSIZED MN_{0.5}NI_{0.5}-Fe₂-XPRXO₄ PREPARED BY CO-PRECIPIATION METHOD
D El-Said Bakeer, K Habanjar, G Youness, M Abou Ghoush
BAU Journal-Science and Technology (2021)
- 34) Optical and magnetic behaviors of Ru-doped ZnO nanoparticles
Khulud Habanjar, Dema Dasuki, R. Awad, M. Rekaby
Journal of superconductivity and novel magnetism (2022)
- 35) Magneto-optical effect of (Sm, Co) co-doping in ZnO semiconductor
K Habanjar, M Almoussawi, AM Abdallah, R Awad
Physica B: Condensed Matter 598, 412444 (2020)
- 36) Investigations of arsenic substitution on the physical, electrical and magnetic properties of Bi-2212 superconductors

W Labban, W Malaeb, K Habanjar, MS Hassan, R Sakagami, Y Kamihara, ...
Phase Transitions 93 (10-11), 1055-1066 (2020)

37) Effect of (Sm, Co) co-doping on the structure and electrical conductivity of ZnO nanoparticles

M Almoussawi, AM Abdallah, K Habanjar, R Awad
Materials Research Express 7 (10), 105011 (2020)

38) Physical and dielectric properties of (Bi, Pb)-2223 superconducting samples added with BaFe₁₂O₁₉ nanoparticles

K Habanjar, FEH Hassan, R Awad
Chemical Physics Letters (2020)

39) Effect of calcination temperature and cobalt addition on structural, optical and magnetic properties of barium hexaferrite BaFe₁₂O₁₉ nanoparticles

K Habanjar, H Shehabi, AM Abdallah, R Awad
Applied Physics A (2020)

40) Effect of Pelletization Pressure on the Physical and Mechanical Properties of (Bi,Pb)-2223 Superconductors

Khulud Habanjar, Ahmad Najem, A. M. Abdel-Gaber and R Awad
Physica Scripta (2020)

41) Effect of BaFe₁₂O₁₉ Nanoparticles Addition on (Bi,Pb)-2223 Superconducting Phase

Khulud Habanjar, F. El Hajj Hassan, R. Awad
Modern Applied Science (2019)

42) Magnetoresistivity studies for BiPb-2223 phase added by BaSnO₃ nanoparticles

Mai ME. BARAKAT, Khulud HABANJAR,
Journal of Advanced Ceramics (2017)

43) Investigation of Physical and Mechanical Properties of (BaSnO₃)_x(Bi,Pb)-2223 Composite

Khulud Habanjar, M ME Barakat, R Awad
IOP Conf. Series: Journal of Physics (2017)

44) Comparative studies for the physical properties of superconducting (BaSnO₃)_x(Bi,Pb)-2223 samples determined from excess conductivity and thermoelectric power analysis

Khulud Habanjar, F. El Hajj Hassan, R. Awad,
Materials Research Express (2019)

45) Stark shift and g-factor tuning in nanowires with Rashba effect

Iman Alhaddad , Khulud Habanjar , M.R. Sakr ,
Physica B 475 (2015)

SENIOR PROJECT SUPERVISION

Literature Review on the green synthesis of ZnO nanoparticles

Student: Hiba Hadidi.

Mechanical behavior of (Bi,Pb)-2223 superconductors added with graphene oxide.
Students: Rola Moussa, Fatima Hajir and Yaacoub Irani.

Effect of temperature on dielectric properties of (Nd, Y) co-doped ZnO nanoparticles.
Students: Ahmad Rich and Tala Farhat.

RESEARCH EXPERIENCE

Ph.D. Thesis (Feb 2016 – May 2019)

Title: Synthesis and Characterization of nano-Superconductor Composite Materials

Department of Physics, Faculty of Science, BAU, Lebanon

M.Sc. Thesis (Sep 2012 - Aug 2015)

Title: Stark Effect in a Semiconductor Quantum Wire

Department of Physics, Faculty of Science, BAU, Lebanon

Syntheses & Research Interests: Photodegradation, Gas sensors, permanent magnets, nanocomposites, Nanoparticles, Superconductors, Spectrophotometric analysis (FT-IR& UV-VIS), Vickers Microhardness, Universal Testing Machine, XRD, SEM, TEM, Ball Milling, LCR tester, Thermoelectric power.

Department of Physics, Faculty of Science, BAU, Lebanon

Laboratory Supervisor

Advanced Materials Science Laboratory

Department of Physics, Faculty of Science, BAU, Lebanon

CONFERENCES

Poster Contributions

- 1) International conference of superconductivity and magnetism, May 2023, Fethiye, Turkey
- 2) International conference of superconductivity and magnetism, May 2017, Antalya, Turkey
- 3) Frontiers in Theoretical and Applied Science, Feb 2016, AUS, Sharjah, UAE
- 4) 22nd International Scientific Conference of LAAS; April 14th-15th, 2016. Kaslik (USEK), Lebanon
- 5) Workshop on Materials Technology, March 16th & 17th 2017, BAU, Lebanon

TECHNICAL SKILLS

Microsoft Office (Word, PowerPoint & Excel)

Origin Program MatLab

LateX

LANGUAGES

English French Arabic