

Assistant Professor Dr.

Talib Zaidan Al-Mousawi

Chairman of the Board of Directors of Al-Kut University

Brief overview

Assistant Professor Dr. Talib Al-Mousawi specializes in laser physics and optoelectronics. He possesses extensive academic and administrative experience in higher education, is the Chairman of the Board of Directors of Al-Kut University, and has published more than one hundred research papers, several scientific books, and participated in international conferences.

Academic qualifications

- Bachelor of Science in Physics, College of Science, Al-Mustansiriya University, 1992
- Master of Applied Science in Laser Technology, University of Technology, 2005
- PhD in Laser and Optoelectronic Physics, College of Science, Al-Mustansiriya University, 2016

Key academic and administrative positions

- Chairman of the Board of Directors of Al-Kut University
- President of the Iraqi Laser Society
- Vice President of the Supreme Council of Scientific Societies
- Assistant to the University President for Administrative Affairs
- President of the Association of Iraqi Private Universities and Colleges
- Editor-in-Chief of Al-Jami'i Newspaper
- Chairman of the Board of Directors of Al-Kut University Journal
- Executive Director of the Iraqi branch of the International Friendship Organization
- Head of the Department of Laser and Optoelectronic Engineering
- Acting Head of the Department of Medical Physics

Key achievements

- Contributed to the establishment of Imam Ja'far al-Sadiq University (peace be upon him), serving as Secretary of the Board of Directors from 2004 to 2012.
- Contributed to the establishment of the College of Fundamentals of Religion and served on its Board of Directors from 2016 to 2017.
- Advisor to Al-Mustafa International University (peace be upon him) from 2007 to 2008.
- Founded Al-Kut University and established numerous scientific, humanities, medical, and engineering departments.



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the address

- Iraq – Baghdad
- Iraq – Wasit

Languages

- Arabic is my native language.
- English is excellent.

social media



Websites

- <https://drtalib-almosawi.com/>
- <https://youtube.com/@talibalmosawi1448>
- <https://www.facebook.com/talib.almosawi>
- <https://www.facebook.com/profile.php?id=100029576329274&mibextid=LQQJ4d>
- <https://www.facebook.com/profile.php?id=100003805333056&mibextid=LQQJ4d>

Academic websites

- <https://scholar.google.com/citations?user=upYIWTMAAA&hl=ar>
- <https://www.researchgate.net/profile/Talib-Zeedan-Taban/unconfirmed>
- <https://www.scopus.com/authid/detail.uri?authorId=57795455100>

Leadership achievements

- Establishing local and international academic agreements
- Founding and developing Al-Kut University
- Creating new colleges and scientific, medical, and engineering departments

Scientific memberships

- Member of the Iraqi Physics and Mathematics Society.
- President of the Iraqi Laser Society/Scientific Societies, Ministry of Higher Education and Scientific Research.
- Vice President of the Supreme Council of Iraqi Scientific Societies/Ministry of Higher Education and Scientific Research.
- Member of the Syndicate of University Teachers.
- Member of the Association of University Professors.
- Member of the Nanotechnology Society.
- Member of the American Chemical Society.
- Member of the National Higher Committee for Curricula, Ministry of Education/General Directorate of Curricula.
- Member of the National Committee for Natural Sciences, Ministry of Education, General Directorate of Curricula.
- Member of the Physics Curriculum Development Committee/Ministry of Education.
- Member of the Physics Curriculum Development Committee/Ministry of Education.
- Chairman of the Board and Editor-in-Chief of the University Journal.
- Chairman of the Board of Directors/Al-Kut University Journal.
- President of the Association of Private Universities and Colleges - The Mesopotamia Valley Association for the Development and Advancement of Private Higher Education in Iraq.
- Member of the International Association of Universities.
- Member of the Afro-Asian Universities Association.
- Member of the Executive Council of the Federation of Universities of the Islamic World.
- Executive Director of the International Friendship Organization's branch in Iraq.

- Honorary Director of the Wasit Governorate Sports Association.
- Founder of the Wasit Governorate Youth Football Academy.
- Member of the Arab Academics Union.
- Member of the Iraqi Publishers Union.
- Member of the Iraqi Journalists Syndicate.

Published research

- **More than 100 scientific papers**

- 1- Study of the thermal effects of a high-power GLASS ND laser.
- 2- Generation of the second harmonic from a YAG ND laser.
- 3- Study of the cooling effect on the output power characteristics of a continuous-wavelength carbon dioxide laser system with longitudinal excitation.
- 4- Comparative study of the thermal self-crystallization of a GLASS laser rod using beam divergence and interference methods.
- 5- Mathematical model for calculating the threshold values of laser power entering the eye.
- 6- Structural properties of cadmium telluride (CdTe) crystals.
- 7- Numerical modeling of radiation transport in micro-optical fibers.
- 8- Use of YAG ND lasers for pumping photoactive crystals.
- 9- Study of the spectral and thermal properties of the F₂CCl₂ molecule and the CF-induced radiation.
- 10- Study of the optical and mechanical properties of MUIT-spectrum glass materials.
- 11- Medical applications of low-power lasers.
- 12- Studying the self-focusing of high-energy laser beams.
- 13- Generating maximum output power for a pulsed YAGNd laser system.
- 14- Studying the effect of thickness on the optical properties of aluminum oxide (Al₂O₃) thin films prepared by thermochemical decomposition.

- 15- Using ion implantation technology to improve surfaces and produce new materials by doping argon ions onto silicon wafers and using them as optical detectors.
- 16- Studying the restoration of artifacts using lasers.
- 17- Studying the possibility of eliminating cancer cells using lasers and nanomaterials without surgery.
- 18- Analysis of laser beam pulses to photovoltaic a Si/c-Si heterojunction by using the wavelength 532nm.
- 19- Study the compositional structure of Artifacts and Determine their Ages by used laser Induced.
- 20- Breakdown spectroscopy-Ultimate Beam Expansion Ratios for Nd: YAG laser Harmonics.
- 21- Remote sensing for Nd: YAG laser Harmonics propagation in polluted Atmosphere – Tribological.
- 22- potential of Aluminum Alloy Reinforced with Graphite and zinc particles preparation by powder Metallurgy.
- 23- Heavy Metal Ions Fiber Optic Sensor.
- 24- FREE-SPACE OPTICAL SYSTEM BASED ON VERTICAL TRANSCEIVERS LINK UNDER VARYING SMOKE DENSITY.
- 25- Optical Design Optimization for Indoor Solar Illumination Using Truncated Tetrahedral Pyramid Concentrator.
- 26- Design and Implementation of optical fiber sensor for Ammonia gas Study the Optical Distortion Generated Inside the Nd: YAG Laser Rod Affected by Thermal Lensing.
- 27- Effect of incident wavelength on the optical conductivity skin depth and carrier concentration of the sputtered CdO thin film.
- 28- Spectroscopy study for fluorescent spectrum with optimum parameter and their applications.
- 29- Dual solar cells with collection of metal reflectors and comparison with photodetector.

- 30- Design of five-bit digital phase shifter X-Ray analysis of photodetector (Cdse) for optical microscope photography's and structure analysis.
- 31- First Principle Study on Sensing Properties of quasi-planer born (B36 borophene) Towards COS, SO₂, H₂S and CS₂ gases
- 32- Perception of Mg adsorption on the BC₂N nanotube as an anode for rechargeable Mg ion batteries
- 33- A computational study on the potential application of Ca₁₂O₁₂ cluster for sensing of fungicide molecule
- 34- Al-, Ga- and In-decorated BP nanotubes as chemical sensors for 2-chloroethanol
- 35- Exploring the application of AlN graphyne in calcium ion batteries
- 36- Study to molecular insight into the role of Aluminum nitride nanotubes on to deliver of Fluorouracil (5FU) drug in smart drug delivery
- 37- Potential application of some noble metal decorated AlP nano-sheet for detection of boron trichloride
- 38- Study to amino acid-based inhibitors as an effective anti-corrosion material
- 39- Improving the reactivity and electronic sensitivity of BC₃ nanotubes toward phenylpropanolamine drug by Au-decoration
- 40- A theoretical survey on the F₂, Br₂, and Cl₂ detection by the AlP nanosheet in presence of environmental gases
- 41- A molecular modeling on the sensing behavior of pristine and Stone-Wales defected ZnO monolayers toward PH₃ and AsH₃ gases
- 42- The effect of Si and Cu doping on the sensing performance of BN nanotube toward diazomethane
- 43- Application of pure and Au-decorated YN (Y = B, Al, and Ga) nanotubes as good media for toxic phosgene oxime gas adsorption
- 44- Application of zinc oxide nano-tube as drug-delivery vehicles of anticancer drug
- 45- Introducing a new type of drug delivery system based on the silicon carbide monolayer

- 46- Inhibitory behavior and adsorption of amino acids based anticorrosion material on the Fe (111) surfaces
- 47- Study the role of halide counterions to potential corrosion inhibitor in imidazolium based ionic liquid
- 48- Evaluation the removal of edifenphos molecule by aluminum carbide monolayer: A DFT study
- 49- Application of pure and Sc-decorated GaN nanotube in the 5-fluorouracil anti-cancer drug delivery: DFT calculations
- 50- Carbon-like BeO nanotube as a promising material for anticancer drugs delivery system
- 51- Aluminium carbide nano-sheet as a promising adsorbent for removal of carbendazim
- 52- Application of Ir, Pt, and Au decorated carbon nitride nanosheets for amantadine drug recognition
- 53- Serotonin adsorption on Cu, Ag, and Au decorated BN nanosheets: Solvent effect, energy decomposition, and sensing response studies
- 54- Application of pure and Ti-decorated ALP nano-sheet in the dacarbazine anti-cancer drug delivery: DFT calculations
- 55- Sensing behavior of pure and Cu-doped boron carbide graphene-like nanosheet to carbonyl sulfide: a computational survey
- 56- Potential of pristine, Ga-, Ag-, and Pt-decorated aluminum nitride nanotube in detection of chloroform: A density functional theory study
- 57- A computational investigation on the cyclohexylamine recognition by the pure and Cu-doped BN nanotube
- 58- Evaluation of the potential of silicon carbide monolayer as a promising anode for rechargeable Mg-ion batteries
- 59- Exploring eley–rideal mechanism for CO oxidation over metal doped gallium nitride nanosheet
- 60- Thermodynamical and theoretical modeling to adsorption of arsenic gas on the aluminum pdphosphorus nanotube

- 61- Fe decorated silicon carbide nanosheet as an adsorbent for toxic molecules (SO₂, NO₂ and O₃): A dispersion-corrected density functional theory study
- 62- B₂O₃ monolayer an emerging 2D material as a carrier for anticancer delivery system
- 63- Chloromethine drug adsorption on the zinc oxide nanotube surface for drug delivery system B₂O₃ monolayer an emerging 2D material as a carrier for anticancer delivery system
- 64- Inspection the potential of B₂O₃ monolayer as a carrier for flutamide anticancer delivery system
- 65- Investigation the electrical Sensing behavior of Aluminum carbide (AlC₃) monolayer toward Cyclophosphamide drug
- 66- Acetyl-terminated PAMAM dendrimers as pH controlled carriers for the co-delivery of irinotecan and fluorouracil chemotherapeutics: A molecular dynamics simulation study
- 67- A First-Principles study of B₂O₃ monolayer as potential anode material for calcium-ion batteries
- 68- Removal of As₂O₃ gaseous by using C₃N monolayer adsorbent: DFT study
- 69- Serotonin adsorption on Cu, Ag, and Au decorated BN nanosheets: Solvent effect, energy decomposition, and sensing response studies
- 70- Application of pure and Ti-decorated ALP nano-sheet in the dacarbazine anti-cancer drug delivery: DFT calculations
- 71- Sensing behavior of pure and Cu-doped boron carbide graphene-like nanosheet to carbonyl sulfide: a computational survey
- 72- Potential of pristine, Ga-, Ag-, and Pt-decorated aluminum nitride nanotube in detection of chloroform: A density functional theory study
- 73- A computational investigation on the cyclohexylamine recognition by the pure and Cu-doped BN nanotube
- 74- Evaluation of the potential of silicon carbide monolayer as a promising anode for rechargeable Mg-ion batteries
- 75- Exploring elementary mechanism for CO oxidation over metal doped gallium nitride nanosheet

- 76- Thermodynamical and theoretical modeling to adsorption of arsenic gas on the aluminum phosphorus nanotube
- 77- Chloromethine drug adsorption on the zinc oxide nanotube surface for drug delivery system
- 78- B₂O₃ monolayer an emerging 2D material in as a carrier for anticancer delivery system
- 79- Fe decorated silicon carbide nanosheet as an adsorbent for toxic molecules (SO₂, NO₂ and O₃): A dispersion-corrected density functional theory study
- 80- Inspection the potential of B₂O₃ monolayer as a carrier for flutamide anticancer delivery system
- 81- Investigation the electrical Sensing behavior of Aluminum carbide (Al₄C₃) monolayer toward Cyclophosphamide drug
- 82- Acetyl-terminated PAMAM dendrimers as pH controlled carriers for the co-delivery of irinotecan and fluorouracil chemotherapeutics: A molecular dynamics simulation study
- 83- A First-Principles study of B₂O₃ monolayer as potential anode material for calcium-ion batteries
- 84- Removal of As₂O₃ gaseous by using Al₄C₃ monolayer adsorbent: DFT study
- 85- Aluminum carbide sheet-like materials as promising drug delivery systems for anticancer drug
- 86- First-principles studies on two-dimensional aluminum carbide as potential nanocarriers for drug delivery systems
- 87- Application of BeO carbon-like nanotube for hydroxyurea anticancer drugs delivery; ab initio calculations
- 88- Isoniazid drug detection by palladium decorated aluminum phosphide semiconductors: a molecular modeling study
- 89- POCl₃ vapor detection by pure and Au-decorated AlN and AlP nanosheets
- 90- A brief review on pharmaceutical applications of deep eutectic solvents as green solvents
- 91- Analysis of the protection of copper corrosion by using amino acid inhibitors

- 92- Pristine and Pt-decorated AlP and BP nanotubes as potential chemical sensors for phosphine
- 93- Development of hybrid machine learning model for simulation of chemical reactors in water treatment applications: Absorption in amino acid.
- 94- B₂O₃ monolayer an emerging 2D material in as a carrier for anticancer delivery system
- 95- Engineering promising A- π -D type molecules for efficient organic-based material solar cells
- 96- Anticancer Drug-Loading Capacity of Green Synthesized Porous Magnetic Iron Nanocarrier and Cytotoxic Effects Against Human Cancer Cell Line
- 97- Waste heat recovery of an UAV propulsion system based on PEM fuel cell by a novel transcritical CO₂ - LNG hybrid cycle; thermodynamic and multiple linear regression analyses
- 98- Sarin chemical warfare agent detection by Sc-decorated XN nanotubes (X = Al or Ga)
- 99- Thermodynamic and density functional theory study the removal of different forms of gas arsenic by using aluminum nitride nanotube
- 100- A first principle study on sensing properties of quasi-planer born (B₃₆ borophene) towards COS, SO₂, H₂S and CS₂ gases.
- 101- Theoretical Sensing Performance for Detection of Cyclophosphamide Drug by Using Aluminum Carbide (C₃Al) Monolayer: a DFT Study
- 102- Design new D- π -A materials for sensitizers for dye-sensitized solar cells: Quantum chemical study
- 103- Retraction Note: Oxygen reduction reaction on metal-doped nanotubes and nanocages for fuel cells (Ionics, (2022), 28, 7, (3409-3419), 10.1007/s11581-022-04564-w(
- 104- A first-principles study of B₂O₃ monolayer as potential anode materials for calcium-ion batteries
- 105- Chlorine trifluoride gas adsorption on the Fe, Ru, Rh, and Ir decorated gallium nitride nanotubes
- 106- Determining the parameters of noise pollution in the central area of the Almaty city in Kazakhstan

- 107- Word of Mouth's (WOM) Impact on Students B-School Selection.
- 108- A density functional study on the sensing behavior of copper doped BC3 nanosheet toward.
- 109- The effect of Stone–Wales defect on the sensitivity of a ZnO monolayer in detection of PH₃ and AsH₃ gases: a DFT study
- 110- DFT and TD-DFT Investigation of the Electronic and Optical Properties of halogenated C₆₀ Fullerene for Photonic and Laser Applications

Scientific publications

- Renewable Energy – Prospects and Future.
- Renewable Energy – Management and Storage.
- Building a Second Harmonic System – In Solid-State Lasers and its Applications.
- Nanomaterials and their Industrial Applications.
- Building a Spectroscopic Analysis System – For Laser-Induced Plasma and its Applications.
- Superconducting Materials and their Industrial Applications.
- The Art of Leadership and Management.
- Electrical Power in Iraq: Reality and Future.
- Understanding Laser Technology.
- Laser fundamental and technology

Supervision and scientific discussions

- Member of the Master's thesis defense committee for Maher Sabr Ahmed, Imam Reza University (PBUH), Iran, 2023, entitled: "Optimization of Tandem Perovskite-Based PPV/PCBM Solar Cell Using Electrical and Optical Properties".
- Supervisor of the doctoral dissertation for Asmaa Kadhim Ghafra, specializing in Physics/Laser and Optics, Azerbaijan Shahid Madani University / Islamic Republic of Iran, 2026- ongoing.
- Chair of the Master's thesis defense committee for Inas Alawi Razzaq, College of Science, Wasit University, 2025, entitled: "Enhancing TiO₂ Properties through Metal Oxide Doping Synthesis and Application".
- Supervisor of the PhD thesis entitled: "Thermodynamic and Economic Assessment and Multi-Objective Optimization of a Combined Power, Cooling, and Hydrogen Production System Based on Solar Energy and Indigenous

Biofuel in Iraq” for the student Zumurud Ahmed Salman, Kashan State University, (2026 - ongoing).

Conferences, courses and workshops

- Advanced English Language Course.
- IC3 Course.
- Course in University Teaching and Training Methods and Computer-Assisted Learning/University of Technology.
- Advanced Course in Meteorology and Remote Sensing.
- Advanced Computer Course for Academic Promotion of University Professors.
- International IC3 Training and Education Certificate from Certiport International Training Company.
- TOEFL Certificate.
- Certificate from the World Health Organization.
- Certificates from several Iraqi scientific societies.
- Leadership and Innovation Conference, United Arab Emirates.
- Conference of the Federation of Universities of the Islamic World, Kingdom of Saudi Arabia, Makkah.
- Conference of the Federation of Universities of the Islamic World, Al-Azhar University, Egypt, Alexandria University.
- Conference of Universities of Iran and the Arab World, Ferdowsi University of Mashhad.
- Numerous scientific conferences at Iraqi public and private universities.
- Participation in management and leadership courses at Al-Kut University College.
- Delivering lectures on the art of management and leadership.
- Delivering lectures on the fundamentals of scientific research.
- Delivering lectures on the mechanisms of scientific publishing.
- Delivering lectures on how to obtain international university rankings and compare them.
- Delivering lectures on how to obtain quality certifications.
- Laser applications in nanotechnology.
- Measuring the age of artifacts using half-life equations for radioactive isotopes.
- Laser second compatibility (SHG) and its applications.
- Examining graded materials and the purity and composition of certain elements using LIBS technology.

- Detecting artifacts using lasers.
- University professor ID/scientific ID.
- Indexed scientific journals.
- International and national rankings.
- ISO certifications for academic institutions.
- Drugs and their health and social effects in Iraq: solutions and treatments.
- Detection of TNT and C4 scavengers using the LIBS system
- Modern technology used in second-consonance Nd:YAG solid-state lasers
- Modern laser systems for measuring pollution levels in the Tigris River and their treatment
- Types of air pollution and their impact on the environment
- Applications of lasers in measurements, quality control, and material testing using the LIBS system

Awards and thank-you books

- Recipient of dozens of shields, medals, and certificates of appreciation from local, Arab, and international universities and academic and scientific institutions.
- Recipient of more than 50 honorary shields from universities and scientific and research institutions inside and outside Iraq.
- Recipient of more than 50 letters of thanks and appreciation from the Ministry of Higher Education and Scientific Research, the Ministry of Education, university presidents, deans of colleges, and academic and scientific institutions.

Contributed to writing

- The Educational Philosophy of Iraq.
- The Curriculum Development Committee of the Ministry of Education.
- The Internal Regulations of the Association of Iraqi Private Universities and Colleges, and the Wadi Al-Rafidain Association for the Development and Advancement of Higher Education.
- The Internal Regulations of the Federation of Islamic Universities.
- The Higher Education and Scientific Research Law for Private Education in Iraq.
- More than (70) scientific, cultural, and twinning cooperation agreements with reputable local and international universities.

- Preparing recommendations with the World Bank and UNESCO for the development of private higher education in Iraq.
- Preparing recommendations with the Council of Ministers' Advisory Board and the Education Committee regarding the development of private education in Iraq.
- A workshop with the Ministry of Planning on the development of private education in Iraq.
- The Committee for Amending the Internal Regulations of the Federation of Islamic Universities in Mecca.