***Curriculum Vitae***

ProfessorKhalid Abdul-Wahab Ahmad

***Mustansiriyah University – College of –Science --------***

***Mobile****: 07711371387*

***Email****: kkmsl459@yahoo.com*

**Education:**

* 1. Al-Mustansiriyah University (Baghdad),

B. Sc Honors in Physics.

1975- 1977 University of Baghdad (Baghdad, Iraq),

M.Sc in physics. Thesis entitled:

(Interaction of heavy ions with matter).

1983-1990 University of Hull (Hull, U.K.),

Ph.D in physics. Thesis entitled:

(An investigation of defects in electron

Irradiation silicon and diodes)

**ACADEMIC HONORS AND AWARDS:**

**35 letters of appreciation from:**

1. **Minister of Iraqi high education,**
2. **President of Al-Mustansiriyah university,**
3. **Dean of the College of Science in Al-Mustansiriyah university,**
4. **Dean of college of education in Al-Mustansiriyah university,**
5. **Dean of college of science in Rafidain university,**
6. **Dean of college of ebn-Haithum in university of Baghdad.**

**ACADEMIC /TEACHING EXPERIENCE:**

1978-1982 Assistance lecturer, department of physics,

College of Science, Al-Mustansiriyah Univ.,

Oct. 1990 Lecturer, department of physics, college of

Science, Al-Mustansiriyah Univ.

Feb. 1998 Assistance professor, department of physics,

college of Science, Al-Mustansiriyah Univ.

Feb. 2005 Professor, department of physics,

College of Science, Al-Mustansiriyah Univ.

2003-2006 Member of Science promotion comity,

Department of physics, Science college

Al-Mustansiriyah University.

2006-2007 Head of Engineer promotion comity and

member of central science promotion comity,

Al-Mustansiriyah University.

2007-2009 Member of Science promotion comity,

Department of physics, science college,

Al-Mustansiriyah University.

2009- 2013 Head of Central Science Promotion Comity,

Al-Mustansiriyah University.

2013- Member in physics department, scientific and

yank commity.

**COURSES TAUGHT:**

|  |  |
| --- | --- |
| **Undergraduate** | **Graduate** |
| Classical Mechanics,  Atomic physics,  Electricity and Magnetism,  Calculus,  Quantum Mechanics, | Collision Theory,  Dynamical Process,  Interaction of heavy ions with compounds.  Particle penetration through matter.  Electrodynamics  Quantum Mechanics,  Mathematical Physics,  Plasma physics |

**PROFESSIONAL AFFILIATIONS:**

* Chairman, Diversity Committee
* President,

**PUPLICATIONS:**

**SUPERVISED MSc. THESIS ENTITLED:**

**-------------------------------------------------------**

1. The measurement of capacitance-voltage, current voltage and the net concentrations produced in electron irradiated silicon  and  diodes. (1994)

1. Studying the effects of effective charge on the stopping cross section, corrections of Bethe formula and range of heavy ions in gaseous. (1996)

Effects of -rays on some physical properties of aqueous solution of polyethylene glycol (PEG). (1996)

1. Theoretical investigation for (a\si:H\c\si) hetrojunction build in potential its distribution and depletion width. (1996)
2. Theoretical study of the parameters affecting super conducting Josephson’s bridge. (1996)
3. The measurements of capacitance-voltage and current-voltage silicon diode irradiated by x-ray. (1998)
4. The measurements of energy loss for -particles in solids polymeric materials (P.S, P.V.C and P.E.) (1998)

8. Fabrication of high temperature super conducting antinna. (1998)

1. Bragg's rule for stopping of charged particles in gaseous compounds. (1999)
2. The energy straggling of heavy charged particles in solids and gaseous elements. (1999)
3. Barkas corrections for the stopping cross section of charged particles. (1999)
4. Increasing the range of stopping power for charged Particles at energies 1<E(MeV/u)≤0.1. (1999)
5. Modification to Bragg's rule for stopping charged Particles in compounds (2000)

Linear and nonlinear energy loss of slow ions in an electron. (2000)

1. Stopping power and energy straggling on swift ions near plane surface. (2000)
2. Stopping power and shell corrections from orbital mean excitation energies. (2001)
3. Kinetic, free-gas and harmonic oscillator theories of particle stopping in medium. (2001)
4. Dielectric description for interaction of heavy charged particles with solid. (2004)
5. Damping effect of the energy loss for charged Particles reflected from solid surfaces. (2005).
6. Effective charge theory for electronic stopping Power of heavy ions in solids. (2006).
7. Vicinage effects in N-cluster ions collide with condensed matter. (2007)
8. Classical and quantal treatment of electronic stopping of cluster ions. (2008).
9. Heavy swift ions-impact and Bohr’s theory. (2008)
10. The Binary stopping theory of antiprotons. (2008)
11. Wake potential of ion-surface collisions. (2009)
12. Energy Loss Function of Heavy Ions using Transport Fluctuation Cross-Section. (2012) .
13. Energy Loss of proton Beam in Liquid water and DNA. (2012) .
14. Classical and quantum dielectric description of electronic Energy loss. (2013)
15. Binding and screening effects of electronic stopping cross Section. (2014)
16. Effect number of electron of DNA and liquid water. (2015)
17. Stopping power of heavy ions in elements at low velocity  (under research)

**SUPERVISED PhD THESIS ENTITLED:**

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1. Measurements of stopping cross section and range for alpha particles (0.5-2.1MeV) in gaseous elements and compounds. (1998)
2. Energy generation and detection by a high temperature Josephson junction. (2000)
3. Determination of total luminance in the image of a Point source. (2001)
4. Coherent states and the classical limit of some quantum Systems. (2001)
5. Forces, stopping power and energy straggling on swift ions near plane surfaces. (2002)
6. Charge state dependence of the energy loss of slow ions in metals. (2002)
7. Study the effect of ionization Instability on the Magneto-hydrodynamic power generator. (2003)
8. A study the Design and Fabrication of HTSC Wire. (2004)
9. Stopping of molecules and Clusters. **(**2006)
10. Impact-Parameter dependent energy loss of screened ions. **(**2005)
11. Numerical calculations for vibration of basic molecule. (2006)
12. Study of plasma electron beam interaction. **(**2006)
13. Application of the theory of scale relativity. (2006)
14. Partial stopping power and straggling effective charges of di-cluster ions in condensed matter. (2006)
15. Impact parameter dependence of the energy loss of fast cluster ions. (2010)
16. Impact parameter dependent of energy Loss (straggling) of swift ions using Binary Theory. (2011)
17. Study of the electronic energy loss of swift di-cluster ions using Harmonic Oscillator Model. (2012)
18. Studying energy loss of hydrogen ion beam in DNA and H2O. (2015)
19. Wake-Potential of penetrating ions using Harmonic Oscillator atom. (2015)
20. Energy loss and wake potential of proton in plasma. (2015)
21. Energy loss of Hydrogen di-cluster ions in DNA and liquid water. (2016)
22. Wake potential and energy loss of charged particles in nanotube. (under research)
23. Interaction of ions with carbon nanotubes. (under research)
24. Total ionization cross section of protons in bioorganic and inorganic compounds like (DNA and H2O). (under research)

Publications:

1. Al-Bedri and K.A. Ahmad,

'Theoretical energy straggling of Cf252 fission fragments in various absorber',

Nucl. Inst. & Meth. Vol. 198 (1982) 583

Khalid A. Ahmad, ' Theory of surface depletion region for undoped silicon p+nn+ junction'

Al-Mustansiriya, J. Sci., Vol. 9, No. 1, (1998) 87

1. Khalid A. Ahmad, Hashim H. Jawad and H.A.Hasan,

'Depletion layer approximation analysis and the silicon p+nn+ junction'.

Al-Mustansiriya, J. Sci., Vol. 9, No. 3, (1998) 48

1. Hashim H. Jawad, Khalid A. Ahmad and Sawsan A. Al.Zahra,

'The effect of annealing and ã-radiation on the electrical properties of polymethyle methacry, polyoxmethalene and polyacrylonicrile',

Al-Mustansiriya, J. Sci., Vol. 9, No. 3, (1998) 58

1. Hashim H. Jawad, Khalid A. Ahmad and Sanna R. Salem,

'Electron mobility in high pressure gases Ar and Co2',

Al-Mustansiriya, J. Sci., Vol. 10, No. 1, (1999) 60

1. Khalid A. Ahmad, H. H. Jawad and Majida A. Al-Kubaisy,

'The effects of time on the measurements of capacitance-voltage and net concentrations produced in electron irradiated silicon p+nn+ and n+np+ diodes',

Al-Mustansiriya, J. Sci., vol. 10, N0.1, (1999) 66

1. Khalid A. Ahmad, H.H.Jawad and Majida A. Al-Kubaisy,

'The I-V characteristic of silicon pn-junction diodes irradiated electrons,

Al-Mustansiriya, J. Sci., Vol. 10, No. 1, (1999) 7

1. Subhi. K. Hasson, Khalid A. Ahmad and J.A.AlAmeri,

'The effects of -rays on some physical properties of aqueous solution of polyethylene Glycol (PEG)' Al-Mustansiriya, J. Sci., Vol. 10, No. 2, (1999) 71

1. Khalid A. Ahmad, Nadia A. Al-Banna,

' Effects of the effective charge z\* on the corrections of Bethe's formula', Al-Mustansiriya, J. Sci., Vol. 10, No. 3, (1999) 64

1. Nadia A. Al-Banna, Khalid A. Ahmad,

' Effects of the effective charge z\* on the range of -particles, heavy ions (z>4) and fission fragments in different gases',

Al-Mustansiriya, J. Sci., Vol. 10, No. 3, (1999) 78

1. Mohammed A. Z. Habeeb, Ziyad K. A. Abdel-Kader and Khalid A. Ahmad,

' Coherent state and classical limit of the hydrogen atom',

Al-Mustansiriya, J. Sci., Vol. 11, No. 1, (2000) 95

1. Daya. N. Rouf, W.A. Latif and Khalid A. Ahmad,

'Comparison between normal metal, low and high temperature superconductors',

Al-Mustansiriya, J. Sci., Vol. 10, No. 1, (1999) 123

1. Daya. N. Rouf, Fatima A. Saeed and Khalid A. Ahmad,

'Determination of the transition temperature, Tc, by a non-contact method for high temperature superconducting samples', J. of Colllege of Education, No. 5 (2001) 19

1. سحر عبد العزيز ، خالد عبد الوهاب ، فلاح علي حسين.

حساب قدرة الايقاف للمركبات في مدى الطاقات (0.2 – 0.3 MeV)

### Al-Mustansiriya, J. Sci., Vol. 12, No. 8, (2001) 1281

1. نورا شمعون ارواها ، خالد عبد الوهاب احمد ، عبد الله احمد رشيد.

تصحيح باركز للمقطع العرضي لقدرة ايقاف الجسيمات المشحونة.

Al-Mustansiriya, J. Sci., Vol. 11 No. 2, (2000) 99

1. نورا شمعون ارواها ، خالد عبد الوهاب احمد ، عبد الله احمد رشيد.

تصحيح باركز ومدى الجسيمات المشحونة عند مدى الطاقات الواطئة.

Al-Mustansiriya, J. Sci., Vol. 12 No. 1, (2001) 105

1. خالد عبد الكريم هادي ، خالد عبد الوهاب احمد ، محمد احمد عبود الجبوري

تطوح الطاقة للجسيمات المشحونة الثقيلة في المواد الغازية والصلبة.

Al-Mustansiriya, J. Sci., Vol. 12 No.8, (2001) 1239

1. خالد عبد الكريم هادي ، خالد عبد الوهاب احمد ، محمد احمد عبود الجبوري

تطوح المدى للجسيمات المشحونة الثقيلة خلال اهداف غازية وصلبة.

Al-Mustansiriya, J. Sci., Vol. 12 No.8, (2001)1239

1. زينب وهبي عبد اللطيف، خالد عبد الوهاب احمد.

تطوير قاعدة براكز للجمع للمركبات الغازية.

Al-Mustansiriya, J. Sci., Vol. 12 No.8, (2001) 1257

1. زينب وهبي عبد اللطيف، خالد عبد الوهاب احمد.

تطوير حساب المدى بطريقة براكز للمركبات الغازية.

Al-Mustansiriya, J. Sci., Vol. 12 No. 8, (2001)

1. احمد عزيز احمد ، خالد عبد الوهاب احمد ، محمد احمد الجبوري.

زيادة مدى قدرة الايقاف للجسيمات المشحونة بالطاقات (1<E(MeV/u)≤0.1)',

Al-Mustansiriya, J. Sci., Vol. 12 No.7, (2001) 911

1. احمد عزيز احمد ، خالد عبد الوهاب احمد ، محمد احمد الجبوري.

حساب مدى الجسيمات المشحونة الثقيلة (Z1≥2) باهداف مختلفة

# مجلة علوم المستنصرية، المجلد 12 ، العدد 4 ،, (2001) 911

1. قصي خالد احمد ، خالد عبد الوهاب احمد ، غادة صباح كرم

حساب الاستضاءة الكلية في صورة جسم نقطي لمنظومة بصرية منظمة فتحة دائرية.

#### نشر في المؤتمر العلمي الخامس عشر/ كلية التربية / الجامعة المستنصرية. (صفحه 174-180)

1. عبد الله احمد رشيد , خالد عبد الوهاب , عمر احمد موفق

تصحيح القشرة للمستويات الذرية لتفاعل البروتون في اهداف صلبة وغازية .

Al-Mustansiriya, J. Science,vol.17, No.2 (2006) 12

1. خالد عبد الوهاب, خالد سلمان أبراهيم, بيداء محسن احمد

تأثير اللاضمحلال على الجهد المحتث للبروتونات المتفاعلة

J. Sci. and Engi. Vol. 3 (2005) 81

1. خالد عبد الوهاب, خالد سلمان أبراهيم, بيداء محسن احمد

تأثير اللاضمحلال على تفاعل الايونات الثقيلة مع المواد الصلبة

J. Sci. and Engi. Vol. 3 (2005) 63

1. Khalid A. Ahmad

Forces on swift charged particles interacting with surface-Plasmon modes in cylindrical cavity. Al-Mustansiriya, J. Sci., Vol. 15 No. 2, (2004) 19

1. Riyahd K. Al-Ani, Khalid A. Ahmad and Khalid S. Ibrahim

The stopping power and energy straggling of swift ions in individual planes of surfaces.

Al-Mustansiriya, J. Sci., Vol. 15 No. 4, (2004) 59

1. Sherzad A. Taha, Khalid A. Ahmad and Khalid S. Ibrahim

‘Energy loss of hydrogen di-cluster ions in Al, C and Au targets’,

Zanco, J. pure & Appl. Sci. Salahaddin Univ. Hawler, vol. 19, No.13,

(2007).

1. \*حساب طاقة جزيئة الهيدروجين باستخدام الطرق العددية

حيدر محمد عبدالجليل , مظرعبدالستار, خالدعبدالوهاب أحمد

Journal of Babylon University, No. 1196, 8th. Nov. 2006

1. Khalid A. Ahmad and Sana T. Kadhem,

‘Semi-classical approach of stopping ions’.

Accepted in Journal of the college education, N0. 184 (2008)

1. Khalid A. Ahmad and Sana T. Kadhem,

‘Binary stopping theory of stripped and screened ions’.

Acceptance in Journal of the college education, N0. 185 (2008)

1. Khalid A. Ahmad and Rasha S. Ahmad,

‘Shell correction in Bohr and bethe formulas’,

J. of college education, Vol. 59, No. 3 (2009) 897

1. Khalid A. Ahmad, Shatha J. Khalaf

‘Induced potential for proton ions moving parallel to the solid Surface’. (2010)

Al-Mustansiriya J. Sci., vol. 21, No. 5 (2010) 20

1. Muthana M. Mahmood, Riayhd K. Al-Ani and Khalid A. Ahmad,

‘Impact parameter dependence of electronic energy loss of fast ions’,

Al-Mustasiriya J. Sci., vol. 21, No. 5 (2010) 1

1. Saeed N. Turki, Mohammed A. Habeeb, Khalid A. Ahmad,

‘Application of Scale Relativity (SCR) Theory to the Problem of a Particle in a Finite One-Dimensional Square Well (FODSW) Potential’,

Journal of Quantum Information Science, 2011, 1, 7-17

Khalid A. Ahmad, Riayhd K. Al-Ani and Muthana M. Mahmood,

‘Convolution approximation method (CAM) for energy loss of cluster ions’,

Journal of the college education, N0. 5 (2011) 26

1. Khalid A. Ahmad, Abdulla A. Rasheed and Sanar G. Hasan,

‘Utilizing Binary theory to investigate dependent of impact parameter on energy loss’.

Journal of the college education, N0. 1 (2012) 339

1. Jalal N. Hussein and Khalid A. Ahmad,

‘Straggling of energy loss for swift ions using classical and quantum Form’,

Journal of the college education, N0. 3 (2012) 204

1. Ahmed Aziz Ajmed, Sana R. Salim, Khalid A. Ahmad,

‘Increasing the energy range of Cherenkov light LDF approximation at high energies ’,

Journal of the college basic education, 18, N0.73 (2012) 21

1. Khalid A. Ahmad, Riayhd K. Al-Ani, Muthanna, M. Mahmood,

‘Energy loss straggling of hydrogen ions in DNA target’,

Inter. Rev. Phy. (IREPHY), Vol. 7, No. 4 (2013) 339.

1. Ahmad, J. Taher, Khalid, A. Ahmad,

‘Stopping and straggling of swift hydrogen Di-cluster ions using energy loss function of harmonic oscillator’,

‘Intern. Rev. of Phy. (IREPHY), Vol. 7, No. 5 (2013) 358

1. Khalid A. ahmad and Ahmad, J. Taher,

‘Variance evaluation of the electronic energy loss straggling for swift Hydrogen di-cluster ions using Harmonic Osillator model’,

J. College Education, Al-Mustansiriyah Univ., No.3 (2013) 15

1. Awfa Z. Khudair, Khalid A. Ahmad, Riayhd K. Al-Ani

‘The ionization potential of DNA and liquid water’,

J. of Asian Sci. Res. 4(3) (2014) 139-148

1. Awfa Z. Khudair, Khalid A. Ahmad, Riayhd K. Al-Ani

‘Shell correction ( od DNA and liquid water’.

‘International Rev. of Phys, vol.8,No.5 (2014) 163

1. Awfa Z. Khudair, Khalid A. Ahmad, Riayhd K. Al-Ani,

‘The ionization potential of DNA and liquid water’,

Journal of Asia Scientific Research, vol.4, no.3 (2014) 139.

1. Nabil J. al-Bahnam, Khalid A. Ahmad and Abdulla A. Rasheed,

‘wake potential of penetrating ions in amorphous carbon target using Quantum Harmonic oscillator (QHO) model’.

International Journal of Application in Engineering & Management (IJAIEM), vol. 3, issue 12, (2014) 37

1. Baida M. Ahmed, Khalid A. Ahmad and Riayhd K. Ahmed

‘Enhanced beam of protons in plasma gas for three systems (Tokmak), Z-pinch and ICF)’.

International Letters of Chemistry, Physics and Astronomy, Vol. 61 (2015) 63-76

1. Ahmed M. Abid, Khalid A. Ahmad

‘The effective number of electrons in DNA and liquid water using MELF-GOS method’,

International j. of Applied Innovation in Engineering & Management (IIAIEM), vol. 4, no. 9, (2015).PP 46

1. Zainab W. Abdul Lateef, Khalid A. Ahmad, Mohammed F. Al-Marjani,

‘Wake effects induced in liquid water by Hydrogen Di-Cluster ions’,

International Scientific Journal, Theoretical & Applied Science, vol. 33, issue 1, 2016. 26

1. Baida M. Ahmed, Khalid A. Ahmad and Riayhd K. Ahmed

‘Energy Loss Correlated Ions in Dense Plasma’, Electron Mater. Let., Vol. 12, No. 3 (2016) PP 419-424

1. Khalid A. Ahmad, Seham Z. Abbas

‘Wake Potential in Interaction of Charged Particles with Carbon Nanotubes’,

International j. of Applied Innovation in Engineering & Management (IIAIEM), vol. 5, no. 2, (2016). PP 11

1. Khalid A. Ahmad, Seham Z. Abbas

‘Induced Forces on Charged Particles Channeling Through Carbon nanotubes’.

Advances in Natural and Applied Science, vol. 10, No.1, (2016) pp 12-21.

1. Iman, T. Al-Alay, Khalid A. Ahmad, Waleed J. Mhana,

‘Evaluation of optical potential for induced neutron cross section reactions and yields for spherical Zirconium-90 up to 20MeV’,

The 3rd. international scientific conference of Medical and health specialties (2016), 631-644 (conference proceeding).

1. Al. Bahnam, N. J., Khalid, A. Ahmad and Rasheed, A.A,

‘Wake potential of swift ions in copper target’,

International J. of Nanoelectronics, Vol. 9, issue 2, 2016, 173-180.

**PROFFESSIONAL DEVELOPMENT**

Conference in Singafore