

## **9Prof. Dr. Mona Mohsen**

**Physics Department, Faculty of Science, Ain Shams University, Abbassia,  
PO 11566, Cairo, Egypt**



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[monam4319@gmail.com](mailto:monam4319@gmail.com)

### **Orchid ID**

<https://orcid.org/0000-0001-5784-3699>

### **Research sites:**

[http://www.researchgate.net/profile/Mona\\_Mohsen4/publications](http://www.researchgate.net/profile/Mona_Mohsen4/publications)

<http://scholar.google.com/citations?user=oXy68EEAAAj>

<https://www.scopus.com/authid/detail.uri?authorId=56962734800>

<https://www.mendeley.com/profiles/mona-mohsen3/>

[linkedin.com/in/mona-mohsen-06712536](https://www.linkedin.com/in/mona-mohsen-06712536)

### **Scopus Metrics overview**

58

Documents by author

489

Citations by 427 documents

**Education:**

- **1973: Ph.D. in Experimental Nuclear Physics, Technical University, Dresden Research Center, Rossendorf, Germany.**
- **1967: M.Sc. in Gamma Spectroscopy, Faculty of Science, Ain Shams University, Cairo, Egypt.**
- **1964: B.Sc. in Special Physics, Faculty of Science, Ain Shams University, Cairo, Egypt.**
- **1960: Baccalaureat Francais in Science, Lycee Franco – Egyptien, Heliopolis, Cairo, Egypt.**

**Editorial ship:**

**Reviewer for the following international journals:**

- **Scientific & Academic Publishing Co, 2016:**
  - American Journal of Materials
  - American Journal of Polymer Science.
  - Journal of Nuclear and Particle Physics.
  - Journal of Nanoscience and Nanotechnology
- **Journal of Polymer Research 2016**
- **Journal of Advanced Research 2017**
- **Reviewer for Polymers for Advanced Technologies 2018**

**Employment History:**

- **1989 – 2003: Full professor & Chair of the Consultant Unit for Materials Properties & Environmental Radiation Studies (CUMPERS), Nuclear-solid state physics, Faculty of Science, Ain Shams University, Cairo, Egypt.**
- **Since 2003: Professor, Emeritus and Chair of the Consultant Unit for materials properties & environmental radiation studies (CUMPERS), Nuclear-solid state physics, Faculty of Science, Ain Shams University, Cairo, Egypt.**

- **1980 – 1984: Associate Professor & head of the physics dept. for girls since 1983 in King Abd El-Aziz University, Saudi Arabia.**
- **2001: Visiting Professor Krause Rehberg at Karl Marx Univ., Halle, Germany in the frame of a Joint Supervision of a Ph.D. Student (channel system between Egypt and Germany).**
- **1995: Visiting Professor Van Veen (past away) at Delft Univ. of Technology, Delft Netherlands in the frame of a Joint Supervision of a Ph.D. Student (channel system between Egypt and Netherlands).**
- **1989: Visiting Professor Frits Pleiter at Rijks Univ., Groningen, Netherlands in the frame of a Joint Supervision of a Ph.D. Student (channel system between Egypt and Netherlands).**
- **1983, 1985, 1987 and 1988 Visiting Researcher at Rijks Univ., Groningen, Netherlands in the field of Hyperfine interaction techniques in materials and for determination of spins of nuclear states.**
- **1982: Visiting Dr. Ottmar Kistner and Dr. Miriam Rafailovich at Brookhaven National Laboratory, USA as Researcher in the field of Perturbed Angular Correlations.**
- **1981: Visiting Researcher at Argonne National Lab., USA in the field of BGO Nuclear detectors.**
- **1973-1976: Post Doctor at Nuclear Research Center, Rossendorf, (ZFK) Germany in the field of Positron Annihilation techniques.**

### **Institutional and national responsibilities:**

- **Since 1997: Founder and Director of the “Consultant Unit for materials properties & environmental radiation studies (CUMPERS)” at the Faculty of Science, Ain Shams University, Cairo, Egypt, for the organization of training courses to scientists in the field of protection from ionizing and non-ionizing radiation as well as in the characterization of nano-structure defects in materials.**
- **Since 2003: Professor, Emeritus at the Physics department, Faculty of Science, Ain Shams University, Cairo, Egypt.**
- **1997-2011: Scientific consultant at “The Science Exploration Center SEC” in Cairo, Egypt for the dissemination of science to the community and school children.**

- **2005-2008:** Consultant at the Egyptian ministry of environment, Cairo, Egypt for ionizing radiation protection.
- **2013-2016:** Vice president of the scientific council at the Egyptian Supreme Council of universities for the award of professorship to university Staff members.

### **Honors, Awards, or Recognition**

- **2018:** Beller Lectureship Award.
- **2015:** Recipient of the “Ain Shams University Excellence Recognition Award in Science” with highest honor gold medal for teaching and research contributions as well as for distinguished services to the community.
- **2015:** Award of the "Shield of Faculty of Science, Ain Shams University", at the celebration of the “Excellence Recognition Award in Science”.
- **Since 2014:** Team leader of "Women in Physics of Egypt” of the IUPAP organization.
- **Since 2013:** APS membership.
- **Since 2011:** Reviewer and Evaluator of the scientific research work for the Egyptian University recipients for the Award of the “Excellence Recognition in Science”.
- **Since 2011:** Reviewer and Evaluator of the projects funded by the “Science and Technology Development Fund (STDF)” organized by the Academy of Science of Egypt.
- **2008-2022:** Recipient of the “Outstanding International Research Publication Award” from Ain Shams University.
- **2007:** Academic Expert at the Joint European Projects (TEMPUS) for reviewing and evaluating “Curriculum Development (CD) projects.
- **1964:** Recipient of the” National honor medal “from the president of the Republic of Egypt for the Award of the first position in rank in B.Sc “Special Physics”.

## **Supervision of researchers at postgraduate level (43):**

### **Ph. D. thesis supervised (20)**

1. Application of a novel non-intrusive methodology for verification of sensitive nuclear materials (2019).
2. Synthesis and Characterization of Hybrid Nanocomposites as Photo catalysts for Wastewater Decontamination (2017).
3. Development of medical heart stent by using nanomaterial graphene composites (2016).
4. Correlation of Positron Annihilation Characteristics with Some Physical Properties of Poly Methyl Methacrylate (PMMA) / Poly Vinyl Alcohol (PVA) Composite (2015).
5. Processing of polymers and its use in some industrial applications (2011).
6. Radiation Identification of (NORM) in air and its relationship with human health and meteorological conditions (2008).
7. Study of flame -retardant polymers and modeling of fire growth and its propagation at the Egyptian Nuclear Installations (2005).
8. Investigations and modeling of dynamics of Environmental Radioactivity levels resulting from non-nuclear industries (2005).
9. Evaluation of radioactivity levels at the ancient Egyptian monuments (2002).
10. Defect studies in semiconducting BaTiO<sub>3</sub> using positron annihilation spectroscopy (2000).
11. Positron annihilation spectroscopy studies in metals and alloys (2000).
12. Nuclear safeguards through measurements of radioactivity of material around nuclear facilities (1999).
13. Application of positron emitted in the decay of <sup>22</sup>Na radioisotope to study free volume in rubber and polycarbonates (1997).
14. Application of positron annihilation techniques to the study of polymer and insulating materials (1997).
15. Positron annihilation studies on Hg-Ba-Ca-Cu-O high temperature super conducting materials (1997).
16. Measurement and analysis of low level natural radioactivity in building Materials and evaluation of its environmental impact (1995).
17. Study of structural defects in chalcopyrite semiconductors by positron annihilation spectroscopy and photoluminescence spectroscopy (1994).
18. Perturbed angular correlation's study of low energy implanted hydrogen and helium atoms interacting with implantation induced vacancies in molybdenum and tungsten (1992).
19. Study of energy levels of some radioactive isotopes (1979).
20. Study of some nuclear properties of the deformed <sup>181</sup>Ta nucleus and the electric quadrupole interaction of the hafnium oxide crystal (1979).

### **M.Sc. thesis supervised (23):**

1. Synthesis and Characterization of ZnO/CuS nanocomposite for waste water decontamination using photo catalysis (2019).
2. Comparative characterization study of the Nuclear Track Detector(CR39) and a used Filmstrip for Uranium Ore Exploration.

3. Enhancement of the Hemocompatibility of Coronary Stents by Surface deposition of Different Coatings (2015).
4. Synthesis and Characterization of quantum dots doped glasses for photonic Applications (2014).
5. Synthesis and Characterization of some polymers for heavy metal decontamination of waste water (2013).
6. Study of the microstructure and mechanical properties of cast Al-6063 doped with SiC nanoparticles (2013).
7. Study of Titanium oxide- Graphene composites for solar energy Applications (2012).
8. Correlation of electric and swelling properties with nano free volume structure of conductive Silicone Rubber composites (2010).
9. Preparation and Characterization of some Nanostructured Oxide Materials (2009).
10. Study of the correlation between thermal properties and the variations of Nano- scale free volume in bismuth borate glasses (2008).
11. Correlation of the mechanical properties and Nano-free volumes in glassy Polymers (2007).
12. Positron trapping in nano-free volumes of deformed polymeric materials (2006).
13. Radiation synthesis of some hydrogel copolymers for treatment of waste water (2006).
14. Study of mechanical properties and recovery stages in the recrystallization process for some aluminum alloys (2004).
15. Study of thermo-mechanical properties of some copper alloys (2004).
16. Study of the environmental radioactive pollution using modern Spectroscopic techniques and its relationship with nuclear safeguards (2002).
17. Spectroscopic investigation of a radioactive isotope (1993) .
18. Study of the energy levels of the gadolinium 152 following the electron decay of the Europium 152 radioactive nuclide (1992).
19. Study of positron decay of the Europium 152 radioactive isotope (1991).
20. Study of nuclear parameters in the decay of <sup>77</sup> Ge radioactive isotope (1991).
21. Analysis of the gamma ray spectrum of the lead - 207 and measurement of the mean life time of 570 Kev level using time delay technique (1984).
22. Measurement of the mean lifetime of the 81 KeV in cesium 133 and the analysis of the gamma ray spectrum using hyper-pure germanium detector (1984).
23. Use of some nuclear parameters in the Tantalum - 181 nuclide to study the electric field gradient in Hafnium oxide crystal (1979).

#### Active memberships in scientific societies

Society	Year of award

-Egyptian Society of Nuclear Science and Applications (ESNSA)	Since 1976	
- Egyptian Nuclear Physics Association (ENPA)	Since 1980	
- Egyptian Materials Science Society (EMRSS).	Since 1980	
-Egyptian Society for Radiation Physics.	Since 1980	
-Egyptian Society for Science Arabization	Since 1980	
-Egyptian Society of Crystallography and its Applications (ESCA).	Since 1990	
-National committee for pure and applied biophysics	2000-2004	
American Physical Society (APS)	Since 2013	

## Conference participation

### International Conferences: (20 )

- 5<sup>th</sup> International conference on Hyperfine Interactions (Berlin, 1980, Germany).
- 6<sup>th</sup> International Conference on Hyperfine Interactions (Groningen, 1983, Netherlands).
- 7<sup>th</sup> International Conference on Hyperfine Interactions (Bragg, 1986, Tschekoslovakia)
- 5<sup>th</sup> International Workshop on Positron and Positronium Chemistry PPC5, (Strasbourg, 1996, France).
- 11<sup>th</sup> International Conference on Positron Annihilation (Kansas City, Missouri, 1997, USA).
- 12<sup>th</sup> International Conference on Positron Annihilation (ICPA-12) (Munich, 6-12 August, 2000, Germany).
- 7<sup>th</sup> International Workshop on Positron and Positronium Chemistry PPC7 (Knoxville, Tennessee, 7-12 July 2002, USA).
- International Eighth Conference of Nuclear Sciences & Applications, Cairo, Egypt (2004) on Fire Safety Review at Nuclear Installation,
- 8<sup>th</sup> International Workshop on Positron and Positronium Chemistry PPC8 (4 9 September, 2005, Coimbra, Portugal).
- International Conference on the 2nd Multifunctional Nanocomposites & Nanomaterials MN 2008 January 11-13, 2008, sharm el sheikh, Egypt.
- African Conference on Non Destructive Testing 12-14 March, 2008 Hammamet –Tunisia.
- The 3<sup>rd</sup> IUPAP International Conference on Women in Physics (ICWIP) October 10-13, 2008, Korea. Women in Physics in Egypt: The Status &

#### **Needs of Female Physics Students.**

- **Third Arab International Conference in Physics and Materials Science. October 20-22, 2009 at Bibliotheca Alexandrina, Egypt.**
- **XXVIII International Conference on Solid State Physics and Material Science Workshop on Functional Nanostructure and Hybrid Organic-Inorganic Materials 22-25 March 2010 Fayoum, Egypt.**
- **The xxx International conference on material Science & Applications. Workshop on Functional Materials: 25-28 November 2012, Marsa Alam, Egypt.**
- **The 5<sup>th</sup> IUPAP International Conference on Women in Physics (ICWIP) August 5-8, 2014, Wilfrid Laurier University, Waterloo, Toronto, Canada: Egyptian Women in physics: Progress and Challenges**
- **The 31<sup>th</sup> International Conference Eg-MRS on Metamaterials January 8-9, 2015, Hurghada, Egypt.**
- **The 32<sup>th</sup> International Conference Eg-MRS on Interdisciplinary fields of Materials Science, January 6-9, 2016, Aswan and Luxor, Egypt.**
- **1<sup>st</sup> International conference in material Science & Engineering, 22-23 February (2016), Cairo, Egypt.**
- **The 6<sup>th</sup> IUPAP International Conference on Women in Physics (ICWIP) July 16-20, 2017, Birmingham University, United Kingdom. "The status of Egyptian women physicists".**

#### **Local Conferences: (14)**

- **The XIII Conference on solid state physics :20-26 January 1990, Sohag– Qena, Egypt.**
- **The XV Conference: 18-22 January 1992, Fayoum & Shebin Al-Kome, Egypt: Egyptian German Workshop on H. T. Superconductivity.**
- **The XVIII Conference: 22-26 January 1995, Suez – Red Sea, Egypt: Workshop on Spectrally Selective Thin Films For Solar Applications.**
- **The XIX Conference: 13-17 March 1996, Ismailia, Egypt: Workshop on Physics of Non-Crystalline Solids.**
- **The XXIII Conference on Solid State Science & Workshop on Physics and Application Potential of Functional Ceramic Thin Films Sharm Al- Sheikh – Sinai – Egypt, 28 September- 2 October 2002.**
- **3<sup>rd</sup> US/Africa Materials Implementation Meeting and US/Africa Materials Workshop Cairo, Egypt from December 11-15, 2004 at the Academy of Scientific Research and Technology (ASRT), Cairo, Egypt.**
- **THE XXIV CONFERENCE on Solid State Physics and Materials Science & WORKSHOP ON Photonic Materials and**

**Optoelectronic Devices 22-26, February 2004 Safaga, Red Sea, Egypt.**

- **A Century of Great Discoveries in Physics,19- 20 February ,2005, Atomic Energy Authority, Cairo, Egypt.**
- **Synthesis, Characterization & Industrial Applications of Nanoparticles And Nanostructure Materials,12-16 November,2005. Mubarak City for Scientific Research & Technology Applications, Egypt.**
- **The 25<sup>th</sup> Conference of Solid State Physics & Material Science, 6-10 March 2005, Luxor, Upper, Egypt. Workshop on Photonic Materials & Optoelectronic Devices.**
- **Applications of Nanotechnology, Sunday12 March 2006, Ain Shams University, Cairo, Egypt.**
- **The 26<sup>th</sup> Conference of Solid State Physics & Material Science 10-14 September 2006, Alexandria, Egypt. Workshop on Nanostructures: Science, Fabrication, Characterization & Devices.**
- **Nanostructure in Science and Technology, Tuesday, 2<sup>nd</sup> May 2006, Faculty of Science, Tanta University, Tanta Egypt.**
- **What is New in Nuclear Medicine, Sunday 12 November 2006, Academy of Scientific Research & Technology, Cairo, Egypt.**

#### **Principal investigator of the following Projects(7)**

##### **1-Sponsored by IAEA**

- **Defect Structure in Materials using Positron Annihilation Spectroscopy (Sponsored in 1989 by IAEA and in 1993 by Ain Shams University).**

##### **2-Sponsored by Ain Shams University**

- **Identification of air pollution in greater Cairo and its relationship with human health and meteorological conditions (1995- 1998) in cooperation with the Egyptian Ministry of Environment and the National Center for Nuclear Safety and Radiation Control, Atomic Energy, Authority of Egypt (AEA).**
- **Preparation and characterization of some flame- retardant polymers for cable insulation applications (2001-2003) in collaboration with the National Center for Nuclear Safety and Radiation Control (AEA).**
- **Study of the effect of gamma irradiation of some polymers used in the remediation treatment of waste water (2004-2007) in cooperation with the National Center for Radiation Research Technology (AEA).**
- **Structural study of some nanomaterials for application in solar cells. (2008-2012).**

- Structural study of Nickel doped Zinc Oxide.
- Preparation of dilute magnetic semi-conductors based on ZnO in nanoparticle form.
- **Enhancement of the Hemocompatibility of Coronary Stents by Surface Deposition of Different nano coatings materials (2015-2017).**

### **3-Sponsored by STDF**

- **Novel Hybrid ZnO-based Nanocomposite as Photocatalyst For Wastewater Decontamination**

### **Language Skills (Spoken and written)**

Arabic, English, German, French

### **PUBLICATIONS :**

**1-Published papers (81), thesis supervised (43)**

**2-Translation to Arabic of the French book entitled "L'histoire des sciences" by Pascal Acot in the framework of the encyclopedia for young people entitled "Que sais-je?"**

**3-E-books: Encyclopedia for nuclear and radiation science in Arabic& English languages.**

**Please see the following sites:**

[http://www.researchgate.net/profile/Mona\\_Mohsen4/publications](http://www.researchgate.net/profile/Mona_Mohsen4/publications)

<http://scholar.google.com/citations?user=oXy68EEAAAj>

### **Teaching Activities:**

- **Nuclear Physics**
- **Modern Physics**
- **Nuclear Reactors**
- **Environmental Impact of Nuclear Energy Sources**
- **Positron Annihilation Techniques for the investigation of defects in condensed matter**

### **Research interest:**

- 1- Synthesis and Characterization of ZnO-based Nanocomposites as Photocatalyst for Wastewater Decontamination**
- 2- Synthesis and Characterization of Structure and Defect structure of materials:**
  - **Structural study of Nickel doped Zinc Oxide for application in solar**

Cells.

- **Preparation and Characterization of Some Hydrogels for Water Purification.**
- **Correlation of Electrical and Swelling Properties with Nano Free-Volume Structure of Conductive Silicone Rubber Composites.**
- **Effect of Conductive Fillers on the Cyclic Stress-Strain and Nano-Scale free volume Properties of Silicone Rubber.**
- **Synthesis and Spectroscopic studies on  $\text{Bi}_2\text{O}_3$  -  $\text{B}_2\text{O}_3$  glasses.**
- **Preparation and characterization of some flame -retardant polymers for cable insulation applications.**
- **Study of thermo-mechanical properties of some copper and aluminum alloys.**
- **Positron annihilation studies on Hg-Ba-Ca-Cu-O high temperature superconducting, semiconducting  $\text{BaTiO}_3$  and chalcopyrite materials.**

**3-Dose Assessment of Radioactivity in environmental samples at ancient monuments and fertilizer industries as well as around nuclear facilities.**

**4-Measurement and analysis of low- level natural radioactivity in building materials and evaluation of its environmental impact.**

**5-Nuclear safeguards determination through measurements of radioactivity of building materials around nuclear facilities.**

**6-Identification of air pollution in greater Cairo and its relationship with human health and meteorological conditions.**

**7-Application of Perturbed Angular Correlation technique (PAC) for the determination of quadrupole and magnetic moments of nuclear levels with lifetimes in the sub-nanosecond range(100-300ps).**

**8-Application of (PAC) for the determination of the electric field gradient & magnetic hyperfine fields of some metals.**

## **List of international Publications (70)**

**1-Reem Mohammed, Mohamed Eid M. Ali, E. Gomaa, M. Mohsen**

Promising  $\text{MoS}_2$  –  $\text{ZnO}$  hybrid nanocomposite photocatalyst for antibiotics, and dyes remediation in wastewater applications

**Environmental Nanotechnology, Monitoring & Management 19 (2023) 100772**

**2-Reem Mohammed, Mohamed Eid M. Ali, Ehsan Gomaa & Mona Mohsen**

Copper sulfide and zinc oxide hybrid nanocomposite for wastewater decontamination of pharmaceuticals and pesticides

**Scientific Reports | (2022) 12:18153**

3-A. Ali, A. M. Sallam, **M. Mohsen**, A. Kasry, and S. O. Abdellatif,

Ultra-Low Threshold Voltage OFET Using PANI Nanofibers,

**IEEE Transactions on Nanotechnology**, vol. 21(2022) pp. 830-835.

4-Reem Mohammed, Mohamed Eid M. Ali, E. Gomaa, **M. Mohsen**

Highly stable, reusable, and MW-assisted prepared ZnO nanorods for wastewater decontamination: Precursors ratios effect and insights on matrix and pollutants mineralization.

**Journal of Environmental Chemical Engineering** 9 (2021) 104630

5-Reem Mohammed, Mohamed Eid M. Ali, E. Gomaa, **M. Mohsen**

**Green ZnO nanorod material for dye degradation and detoxification of pharmaceutical wastes in water**

Journal of Environmental Chemical Engineering 8 (2020) 104295

6-**M. Mohsen**, A. Ashry, A.M. Ismail, F. El-Sayed, D. M. Abd El-Maqsoud, K.R. Mahmoud

Comparative Effect of Gamma Irradiation on the Nano-Free Volume and Electrical Properties of PVA/PEG/Reduced Graphene Oxide Nanocomposites

**Arab J. Nucl. Sci. Appl., Vol. 52, 4, 175-189 (2019)**

7- Islam I. Hussien, **M. Mohsen**, H. M. Hosny and M S Abd El Keriem

Study of the optical properties of V<sub>2</sub>O<sub>5</sub>-Li<sub>2</sub>O-P<sub>2</sub>O<sub>5</sub> glass system

**IOP Conf. Series: Journal of Physics: Conf. Series** 1253 (2019) 012018

doi:10.1088/1742-6596/1253/1/01201

8- **M. Mohsen, Heba Kahil, R. Mohammed, and Sally Helmy**

The status of Egyptian women physicists

**AIP Conference Proceedings** 2109, 050014 (2019)

**Published Online: 03 June 2019**

<https://doi.org/10.1063/1.5110088>

9-Amr M. El Sawy, Nour F. Attiab, Hadeer I. Mohamed, **M. Mohsen**, M.H. Talaat

Innovative coating based on Graphene and their decorated nanoparticles for medical stent applications.

**Materials Science & Engineering C** 96 (2019) 708-715

10-**Mona Mohsen**, Ehsan Gomaa, Nabila Ahmed Mazaid, and Reem Mohammed

Synthesis and characterization of organic montmorillonite-polyvinyl alcohol-co-polyacrylic nanocomposite hydrogel for heavy metal uptake in water

**AIMS Materials Science** 4(5)2017 p.1122-1139

11-**Mona Mohsen**, Mohammed Mohammed El Okr, Ehsan Gomaa, Emad

Hassan Aly, Mohammed Essam

The effect of nickel doping on the structural, defect structural, optical and Magnetic properties of zinc oxide nanoparticles

**Scientific Journal of Review (2016) 5(3) 360-370**

**12-M. Mohsen**, E.Gomaa, M.Sh.Al-Kotb, M.Abdel-Baki, N.Fathy

Positron Annihilation Lifetime and Fourier transform infrared spectroscopic studies on Bi<sub>2</sub>O<sub>3</sub> - B<sub>2</sub>O glasses.

**Journal of Non-Crystalline Solids 436 (2016)1-8**

**13-M. Mohsen**, N.A. Maziad, E. Gomaa, E. Hassan Aly, R. Mohammed

Characterization of some hydrogels used in water purification: correlation of swelling and free volume properties.

**Open Journal of Organic Polymer Materials 5(2015)79-88**

**14-N.A. Maziad, M. Mohsen**, E. Gomaa and R. Mohammed

Radiation Copolymerization of Hydrogels Based in Polyacrylic Acid/Polyvinyl Alcohol Applied in Water Treatment Processes

**Journal of Materials Science and Engineering A 5 (11-12) (2015) 381-390**

**15-M. Mohsen**, H. Hosni, H. Mohamed, A. Gadalla, H. Kahi , H.Hashem

Egyptian Women in physics: Progress and Challenges

**The 5<sup>th</sup> IUPAP International Conference on Women in Physics (ICWIP)**

**August 5-8, 2014, Wilfrid Laurier University, Waterloo, Toronto, Canada.**

**16-M.H. Abd-El Salam** , S. El-Gamal, **M. Mohsen**, and D.M. Abd El-Maqsoud\*  
Effect of Conductive Fillers on the Cyclic Stress-Strain and Nano-Scale Free Volume Properties of Silicone Rubber.

**Chinese Journal of Polymer Science Vol. 32, No. 5, (2014), 558–567.**

**17-M.H.Abd El Salam**, S. El Gamal, D.M. Abd El Maqsoud, **M. Mohsen**

Correlation of Electrical and Swelling Properties with Nano Free Volume Structure of Conductive Silicone Rubber Composites.

**Arab Journal of Nuclear Sciences and Applications, Vol. 46(3) (2013)186-200**

**18- E.H. El-Araby** , M. Abd El-Wahab , H.M. Diab , T.M. El-Desouky ,**M. Mohsen.**

Assessment of Atmospheric heavy metal deposition in North Egypt aerosols using neutron activation analysis and optical emission inductively coupled plasma.

**Applied Radiation and Isotopes 69(2011)1506-1511.**

**19-E. Hassan Aly**, R. Afify Ismail, **M. Mohsen** and B.A. Khalifa

Studies of heat Treatment Effect on Al-3003 Commercial alloy by using Positron Technique.

**Heat Treatment and Surface Engineering, Vol.11 (2011) Nr.1 p.91-102.**

**20- M. Mohsen**, Emad Hassan Aly, E. Gomaa, El-Sayed. A. Hegazy and G.A. Mahmmoud

The Variations in Thermal and Nano Free-Volumes Properties of some  $\gamma$ -

irradiated Hydrogels  
**Journal of Materials Science and Engineering, 4(2010) No.11 (Serial No.36)**

**21- M. Mohsen**, E. Gomaa, M. Sharaf, H. Salem, W. Gomaa  
Effect of deformation and physical aging on nano-scale free volumes in Polycarbonate studied by positron annihilation lifetime spectroscopy.  
**Int. j. Nano and Biomaterials, Vol.2 Nos.1/2/3/4/5,2009.**

**22- E. F. Salem,N. Mostafa, M. M. Hassan, M. Mohsen**  
Effects Induced by Gamma Irradiation on Free-Volumes, Mechanical, and Thermal Properties of Flame- and Non- Flame-Retardant Polyvinylchloride.  
**Journal of Applied Polymer Science, Vol. 113 (2009) 199-206**

**23- N. Mostafa, E. Hassan Ali, M. Mohsen**  
Dynamic Study of Free Volume Properties in Polyethylene/Styrene Butadiene Rubber Blends by Positron Annihilation Lifetime Method  
**Journal of Applied Polymer Science, Vol. 113 (2009) 3228– 3235**

**24- E. Gomaa, E. Hassan Aly, M. Mohsen.**  
Positron Annihilation Lifetime and Differential Scanning Calorimetric Study of Immiscible NBR/PE Blends.  
**Journal of Polymer Science: Part B: Polymer Physics Vol. 47(2009) 227-238.**

**25- Karimat El Sayed, Hala Hosny, Mona Mohsen, Afaf Gadalla, Lotfia El Nadi &Galila Mehena**  
Women in Physics in Egypt: The Status & Needs of Female Physics Students  
**Proceedings of the 3<sup>rd</sup> IUPAP International Conference on Women in Physics (ICWIP) October 10-13, 2008, Korea p.99.**

**26- E. Gomaa, M. Mohsen ,A.S. Taha and M.M. Mostafa.**  
Correlation of mechanical properties with defect structure in commercial pure Al and Al-Mn alloys studies by positron annihilation spectroscopy  
**Materials science Forum 546-549(2007) 783-787**

**27- M. Mohsen**, N. Mostafa, S. M.Rashad A. Ayoub and E. F. Salem .  
Nano-Free Volume Characterization by Positron Annihilation Lifetime Technique in Flame Retardant Poly (vinyl chloride) after Thermal Treatment.  
**8th International Workshop on Positron and Positronium Chemistry PPC8 (4-9, September, 2005, Coimbra, Portugal) & Radiation Physics and Chemistry 76(2007)153- 156.**

**28-N. Mostafa, M. Mohsen, S. Rashad, A. Aiob, El. Salem.**  
Study of The Electrical Properties of Flame Retardant Polyvinylchloride Using Positron Annihilation Lifetime Spectroscopy.  
**Journal of applied polymer science, Vol. 96 (2005) 638- 644**

**29-M. Mohsen**, M. H. Abd-El Salam, A. Ashry, A. Ismail and H. Ismail  
Positron Annihilation Spectroscopy in Carbon Black – Silica – Styrene

Butadiene rubber (SBR) Composites under Deformation.  
**Polymer degradation and stability 87 (2005) 381-388.**

**30-** E. Gomaa, N. Mostafa, **M. Mohsen** and M. Mohammed.  
Correlation between free-volume parameters and physical properties of Polyethylene Nitrile rubber blend.  
**Journal of materials Engineering and Performance Vol. 13 (2004)583-587.**

**31-** N. Mostafa, E. Gomaa and **M. Mohsen**.  
Correlation of thermo-mechanical properties with microstructure in commercial pure Cu and Cu-Zn alloys studied by positron annihilation.  
**Materials Science and Engineering A 373 (2004) 250 -25**

**32-**E. Gomaa, N. Mostafa, **M. Mohsen** and A. S. Taha.  
A study on commercial pure Al(1050) after cold rolling at room temperature with various deformations using positron annihilation.  
**Journal of Materials Engineering and Performance, Vol.12 (2003)190-195.**

**33-**S. Mohamed, N. Mostafa, E. Gomaa and **M. Mohsen**.  
Application of positron annihilation spectroscopy to study the recovery of commercial pure Al and Al-0.96 wt % Si alloys.  
**Journal of Materials Engineering and Performance, Vol.12 (2003) 95**

**34-**E. Gomaa, **M. Mohsen**, A. S. Taha, M. M. Mostafa.  
A study of annealing stages in Al-Mn (3004) alloy after cold rolling using positron annihilation technique and Vickers micro hardness measurements.  
**Materials Science and Engineering.Vol A 362 (2003) 274-279**

**35-****M. Mohsen**, R. Krause - Rehberg , A, M. Masssoud and H. T.Langhammer  
Donor -doping effect in BaTiO<sub>3</sub> ceramics using positron annihilation spectroscopy.  
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