Prof. Nezar Hassan Khdary , PhD, CChem, MRSC

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Nationality: Saudi **Family status**: Married

Education

B.Sc. of Applied Chemistry	Umm Al-Qura University **(1989)** KSA
PhD; Silica Nano-Scavengers for the Determination of Environmental pollutants	University of Southampton, UK. **(2006)**
Public Health Consultant	Saudi Commission for Health Specialties, **(2010)**
Visiting researcher	Northwestern University, USA, **(2012)**
Visiting researcher	University of Central Florida, USA, **(2016)**

Date of Joining in Ministry of Health: **1-5-1990**

Date of Obtaining PhD **2006**

Date of Joining King Abdulaziz City for Science and Technology (KACST): **2010**

Significant Positions

- Professor of Nano-Chemistry Research, KACST, **(2018)**
- Member of Scientific Committee of the International Conference on Environmental Pollution, Risk Assessment and Remediation, Tunisia, **(2018)**
- Member of Organizing Committee of the International Conference on Materials Science and Graphene, Dubai, UAE, **(2018)**.
- Member of Organizing Committee of International Conference on Materials Science and Engineering, Atlanta, USA, **(2016).**
- Supervisor of Excellence Center for Bio-Nanotechnology (**2012-1014)**
- Co-Director of Excellence Center for Integrated Nano (Joint Center between KACST and Northwestern University, Sir Prof. Fraser Stoddart), (**2012-2013**)
- Part-time adviser at Minister of Health, (**2012-2013).**
- Consultant at ARSCO, **(2014- till Now**).

- Chairman of the Committee on Science foundation Grant Research Unit, KACST, (**2011-2102)**.
- Chairman of the Twenty-Eighth Meeting to discuss the international conventions on the environment, Arab League, Cairo, (**2011)**.
- Deputy Director of National Center for Environmental Technology, KACST, (**2010-2012)**
- Supervisor of the Environmental Laboratories**, NCET,** KACST**, (2010-2012)**
- Assistant Research Professor of Nano and Environmental Technology, KACST, KACST (**2010)**.
- Head of Preventive Medicine Affairs, General Directorate of Health Affairs, Makkah Region, (**2009 -2010)**
- Representative of the Kingdom of Saudi Arabia in the Singapore Cooperation Program, Singapore Environment Institute, Singapore**, (2008)**
- Representative of the Kingdom of Saudi Arabia at the Regional Meeting and Seminar on the Health Impact of Air Pollution, World Health Organization, Cairo, Egypt, **(2008)**
- Nominated by the Minister of Health as chairman of the committee appointed to investigate the Sources of pollution in the city of Makkah, and to determine the best resolutions of them, **(2007)**
- Researcher at Research Unit, Toxicology Center, Makkah Region, (**2007-2010)**
- Assistant manager of Environmental Health Department, Health Affairs directorate of Makkah, KSA (**2006-2009**)
- Head of Forensic Toxicology Department, Makkah Toxicology & Forensic Chemistry Center (**1992-1997)**
- Technical Manger of Drugs & Poisons information Unit (**1993-1997**)
- Assistant manager of Analytical Chemistry Department, MTFCC, (**1991-1993)**

Invited Lectures at Conferences and institutions and Journals

1. Keynote Speaker, International Conference on Environmental Pollution, Risk Assessment and Remediation, Tunisia , **(2018)**
2. Keynote Speaker, International Conference on Materials Science and Graphene, Dubai, UAE, **(2018)**
3. Keynote speaker at the Egyptian-Czech Conference on Nanotechnology Applications, Cairo, Cairo University, **(2017)**
4. Speaker at Materials Science and Engineering, Atlanta, USA, **(2016)**
5. Speaker at Materials Science and Engineering, Florida, USA, **(2015)**
6. Speaker at Annual International Conference on Public Health, Athens, Greece, **(2015)**
7. Speaker at water forum in Tunisia, **(2105)**
8. Speaker at *4th* International Conference on Materials and Mechatronics, Singapore, (**2014)**
9. Participant, World Conference on Multifunctional Materials and Nanomaterials, Italy, Elsevier **(2014)**
10. Participant at the World Polymers Congress, Spain, **(2014)**

11. Participant at the Fourth International Conference on Inorganic Membranes, Australia, **(2014)**
12. Speaker on Safety and Safety in Chemical Laboratories - Criminal Evidence Forum in Riyadh, **(2011)**
13. **2nd** International Conference Nanotechnology: Fundamentals and Applications, Canada **(2011)**
14. **2nd** International Conference on Chemical, Biological and Environmental Engineering (ICBEE 2010), Cairo, Egypt, **(2010)**
15. Lecturer in the field of public health at the Center for Graduate Studies and Continuing Education - Directorate of Health Affairs Makkah, **(2009)**
16. International Conference for Nanotechnology Industries the Leading Technology of 21st Century, Riyadh, Saudi Arabia, **(2009)**
17. Invited Lecture on the air pollution, Prince Salman Center, MOH, Riyadh, KSA, **(2008)**
18. Invited Lecture on Water pollution, GDMTC, **(2008)**
19. Invited Lecture on the applications of nano materials for environmental applications King Abdulaziz City for Science and Technology (KACST), Riyadh, KSA, **(2007)**
20. Invited Lecture on the synthesis of nano material by sol-gel process for environmental
21. application, at the National Conference in Chemistry, KSA,**(2007)**
22. Invited Lecture on the risk impact of nano materials, Prince Salman Center, MOH, Riyadh, KSA, **(2007)**
23. Invited Lecture at the symposium on public health (Water contamination), Public Heath Laboratory Medical Center, KSA, **(2006)**
24. Invited Lecture at the Symposium for drug abuse awareness, Specialized Training Center KSA, **(2001)**.
25. Invited Lecture at Hera Hospital on the Hazard of Toxic Substance from medical waste. **(2001)**
26. Invited Lecture at AL-Noor Hospital on Hazard of toxic substance from medical waste. **(2001)**

Journal Editorial board member, Advisory, and Referee

1. Academic Journal of Polymer Science.
2. Arab Journal of Physical Chemistry.
3. TALANTA, ELSEVIER.
4. JSCS, ELSEVIER.
5. CO_2 Utilization, ELSEVIER.
6. Polymer International, ELSEVIER.
7. Infection and Public Health, ELSEVIER.
8. Green Chemistry, RSC.
9. Advances RSC.
10. Arbitrator of several projects in the General Directorate of Research Grants
10. America Chemical Society (ACS)

Technical reports

1. Final report on the program of scientific visit to the University of Central Florida **(2016)**
2. Report on a comprehensive study of the wells of Makkah, Saudi Arabia **(2014)**
3. Final report on the synthesis of high porosity, nanoparticles for the treatment of greenhouse gases **(2013)**
4. Final report on the program of scientific visit to the University of Northwestern (Northwestern University), **(2013)**
5. Final Report on the conclusion of the 28th meeting of those concerned with international environmental conventions at the League of Arab States**, (2011)**
6. Report on the Climate controlling , King Abdulaziz City for Science and Technology, **(2011)**
7. Report on the level of environmental sanitation in the restrooms and restaurants on the roads and highway, Ministry of Health **(2009)**
8. Consultant Report on the Effect of Increasing Concentration of Nitrite in Drinking Water, Ministry of Health **(2008)**
9. Consultant report on the causes of childhood poisoning, Ministry of Health, **(2007)**
10. Annual Report and Future Plans for Environmental Health, Ministry of Health, King Fahd National Library, ISBN 337 -1658, **(2007)**
11. Final report on the effectiveness of the application of the safe disposal program of the hazardous medical waste, Ministry of Health, **(2007)**

Skills Courses and Workshops

1. Advance Training on Latest Microscopy capabilities, University of Tokyo, **(2018)**
2. Benefits and risk of Intellectual Property, KACST, SA **(2018)**
3. Frontiers of Electron Microscopy, KAUST, SA **(2018)**
4. Experience with accredited certificates on these techniques:
   GC-MS, LC-MS, AAS, UV-Vis, Med-Far-IR, BET Surface area, TGA, NS-500, Potentiostat, XRD Powder diffraction. FE-SEM.
5. Project Manager Professional Certificate, Riyadh, KSA, **(2010)**
6. Workshop on Human/Cancer Cell Culture Techniques and Assay, ICSCCB, **(2014)**
7. Health System Research Methodology, WHO, MOH, Jeddah, KSA, **(2008)**
8. Mentor training course, RSC, UK, **(2006)**
9. Introduction to method validation workshop, LGC London, UK, **(2006)**
10. Infectious diseases course **(2006),** KSA
11. Forensic medicine workshop **(2005)**,KSA
12. GC/SPME Workshop, SIGMA-ALDRICH, Oxford**,** UK, **(2005)**
13. Statistical tools for chemists workshop, LGC London, UK, **(2005)**
14. Measurement uncertainty workshop, LGC London, UK **(2003)**
15. Key principles of effective teaching workshop, UOS,UK **(2002)**
16. Environmental health program, KSA **(2001)**

17. Training course in analysis using Atomic absorption spectrophotometer, Switzerland, **(1993)**
18. AMA, for Professional Practice in Clinical Chemistry, George Washington University, USA, **(1991)**
19. Intensive course in toxicology and analysis of toxic compounds, MTC, KSA, **(1991)**

Computer courses and experience

1. CorelDraw course, SA, **(2007)**
2. Photoshop course, UK, **(2005)**
3. Advanced Computer Maintenance Course, UK, **(2002)**
4. Web designer Course, UK, **(2001)**
5. MS-Office , **(2001)**
6. Introduction to Data BASE program McGraw Hill, **(1987)**
7. Worksheet McGraw Hill, **(1987)**

Memberships:

1. Royal Society of Chemistry (MRSC, CChem)
2. Saudi Chemical Society
3. American Chemical Society
4. The New York Academy of Sciences
5. Saudi Computer Society

Students Supervision

1. Supervised MSc student Abdullah Fhaid Alshehri, Chemistry Department, Collage of Science, King Saud University, Saudi Arabia **(2015-2016)**
2. Supervised Student Abdulaziz Abdullah Alangari, in selected research Program, Medicine Collage, King Saud University, Saudi Arabia **(2016)**
3. Supervised Student Waleed Khalid Seddiq, in selected research Program, Medicine Collage, King Saud University, Saudi Arabia **(2016)**

4. Scientific supervisor of talented students (Boys) from Makkah in the production of nano-catalyst(The project has qualified for the exhibition ISAF, USA) ,**(2011)**
5. Scientific supervisor of talented students(Girls) from Jeddah in the production of modified nano particles for inhibition of Hepatitis virus (The project has qualified for the exhibition ISAF) and win international prizes (1st place in Ibda, National Olympiad for science and

technology in Makka City: Feb,2012., 2nd place in Ibda, National Olympiad for science and technology in the Western Region: Mar, 2012. 5th place in Ibda, National Olympiad for science and technology in the Kingdom of Saudi Arabia May, 2012. Silver Medal in IENA, a conference in Germany for science and technology Nov,2012.Award from College of Technology and Innovation in Germany Nov, 2012, Award Women's Inventors Associating "NOVA" in Bosnia and Herzegovina Nov, 2012, 1st Place in the 4th Scientific Meeting in Umm Al-Qura University Feb, **(2013).**

6. Scientific supervisor of 22 students (Girls) of Al-Baha Region in Nano Forum,**(2012)**
7. Scientific supervisor of 2 Student (Boys) from Riyadh in using nanoparticle for Malaria treatment. The project achieved third place in the world competition (Intel-ISEF, Phoenix, USA) In Bio-Chemistry. ,**(2012)**
8. A member in Mawhiba Mentorship Program for Talented Students

Publications (Journals)

1. Low-loading of oxidized platinum nanoparticles into mesoporous titanium dioxide for effective and durable hydrogen evolution in acidic media, MS Amer, MA Ghanem, AM Al-Mayouf, P Arunachalam, **Nezar H Khdary**, *Arabian Journal of Chemistry*, (**2018)**
2. Enhanced CO_2 Adsorption by Nitrogen-Doped Graphene Oxide Sheets (N-GOs) Prepared by Employing Polymeric Precursors, A Alghamdi, AF Alshahrani, **Nezar H Khdary**, FA Alharthi, HA Alattas, SF Adil, ***Materials*** 11 (4), 578, (**2018)**
3. Sequestration of CO_2 using Cu nanoparticles supported on spherical and rod-shape mesoporous silica, **Nezar H Khdary**, MA Ghanem, ME Abdesalam, MM Al-Garadah, *Journal of Saudi Chemical Society* 22 (3), 343-351, **(2018)**
4. Synthesis and modification of mercapto-submicron scavenger for real-time extraction and preconcentration of As (iii), **Nezar H Khdary**, AEH Gassim, AG Howard, TS Sakthivel, S Seal, *Analytical Methods* 10 (2), 245-255, **(2018)**
5. Polymer-silica nanocomposite membranes for CO_2 capturing, **Nezar H Khdary**, ME Abdulsalam, *Arabian Journal of Chemistry*, (**2107)**
6. Anchoring di and tri-metallic nanoparticles on an amorphous functionalized surface for inducing photocatalytic activity, **Nezar H Khdary**, WS Alkhuraiji, MA Ghanem, FA Alqureshah, *New J. Chem. RSC*, 41,20,11556-11567, **(2017)**.
7. Synthesis and Characterizations of Titanium Tungstophosphate Nanoparticles for Heavy Metal Ions Removal. MA Ghanem, **Nezar H Khdary**, AM Almayouf, MA Salah, *Journal of Solid State Phenomena*, 257, **(2017)**
8. Modeling Distribution of Selective Ions in Urban and Rural Areas using Geographical Information System, **Nezar H Khdary**, AE Gasim, ME Muriani, AA Alshehrie, *Journal of Water Resource and Protection*, 516**, (2015)**

9. Highly Adapted Polymer Templates Formed By Phase Inversion Technique for Electrodeposition of Platinum Dots, **Nezar H Khdary**, ME Abdelsalam, FMB Manie *Int. J. Electrochem*. Sci 10 (3), **(2015)**
10. An Epidemiological Study on Influenza A (H1N1) in Makkah, **Nezar H Khdary**, MA Alalem, AM Turkistan, SS Alghamdi, *Advances in Infectious Diseases*, 198, **(2014)**
11. The Distribution and Accretion of Some Heavy Metals in Makkah Wells **Nezar H. Khdary** and Ahmed E. H. Gassim, *Journal of Water Resource and Protection*, 998, **(2014)**
12. Solid-state characterization and photoinduced intramolecular electron transfer in a nanoconfined octacationic homo [2] catenane, JC Barnes, M Frasconi, RM Young, Nezar H Khdary, WG Liu, SM Dyar, *Journal of the American Chemical Society*, 136, **(2014)**
13. Extraction of Di-Methyl Phthalate Using Smarta Nanoscavengers, **Nezar H Khdary** *Advanced Materials Research*, 950, **(2014)**
14. Incorporation of Cu, Fe, Ag, and Au nanoparticles in mercapto-silica (MOS) and their CO_2 adsorption capacities, **Nezar H Khdary**, MA Ghanem, MG Merajuddine, FMB Manie *Journal of CO_2 Utilization*, 5, **(2014)**
15. Highly dispersed platinum nanoparticles supported on silica as catalyst for hydrogen production, **Nezar H Khdary**, MA Ghanem, *RSC Advances*, 4 (91), **(2014)**
16. Mesoporous polyaniline films for high performance supercapacitors, **Nezar H Khdary**, ME Abdesalam, GEL Enany, *Journal of The Electrochemical Society*, 161, **(2014)**
17. Determination of Ultra-Trace of Herbicides using Smart Nanoparticles, **Nezar H Khdary** *Advanced Materials Research*, 699, **(2103)**
18. Metal–organic–silica nanocomposites: copper, silver nanoparticles–ethylenediamine–silica gel and their CO 2 adsorption behavior, **Nezar H Khdary**, MA Ghanem, *Journal of Materials Chemistry* 24, **(2012)**
19. Scavenging of benzodiazepine drugs from water using dual-functionalized silica nanoparticles, **Nezar H Khdary**, AE Gassim, AG Howard, *Analytical Method* ,9, **(2012)**
20. Rapid thermally assisted donor–acceptor catenation, Albert C Fahrenbach, Karel J Hartlieb, Chi-Hau Sue, Carson J Bruns, Gokhan Barin, Subhadeep Basu, Mark A Olson, Youssry Y Botros, Abdulaziz Bagabas, **Nezar H Khdary**, J Fraser Stoddart, *Chemical Communications*, 73, **(2012)**
21. New solid-phase-nanoscavenger for the analytical enrichment of mercury from water **Nezar H Khdary**, AG Howard, *Analyst* 136 **(2011)**
22. Using total dissolved substance (TDS) to recognize the sources of drinking water in the central area of Makkah AL-Mukaramah, JSCS, 40929-36, *(2009).*

23. Spray synthesis of monodisperse sub-micron spherical silica particles, AG Howard, **Nezar H Khdary,** *Materials Letters* 61, **(2007)**
24. Silica based Nano-scavengers for the determination of environmental pollutants using solid phase dispersion extraction, **Nezar H Khdary**, *PhD Thesis*, University of Southampton **(2006)**
25. Nanoscavenger based dispersion preconcentration; sub-micron particulate extractants for analyte collection and enrichment, AG Howard, **Nezar H Khdary**, *Analyst* 130, **(2005)**

26. Spectrofluorimetric determination of surface-bound thiol groups and its application to the analysis of thiol-modified silicas, AG Howard, **Nezar H Khdary**, *Analyst* 129 **(2004)**
27. A New Technique for Visualizing Thin Layer Chromatography Plates, The International Association of Forensic Toxicology (IAFT), 26,3, 1996
28. A new technique for visualizing thin layer chromatography plates, **Khdary, N.H.** and Shaikh, K.M. *Bull. TIAFT* 26:38–41. **(1996)**

Published Papers at Conferences

1. A new Biosensor Based on silica coated for ultra-trace hazard molecule detection, International Conference on Bio-Sensing Technology, Lisbon, ***(2015)***.
2. Synthesis Amine Modified Silica Nanoparticles for Extraction and Preconcentration of Heavy Metals from Drinking Water, **(2011)**, *247, ^{2}th ICNFA,*
3. Comprehensive Study of Makkah Water Wells; Including, heavy metals analysis,
4. Physical properties and Biological quality and geographical point system. *MOH,* **(2009)**
5. The Effect of Adding Selected Electrolytes on the Surface Area of Nano-Sized Silica Particles, The International Conference for Nanotechnology Industries the Leading Technology of 21st Century, Riyadh, KSA, (**2009)**
6. Synthesis and Modification of Silica Nano Particles for the Determination of Narcotics by Solid Phase Dispersion Extraction, The International Conference for Nanotechnology Industries the Leading Technology of *21st Century, Riyadh, KSA,* **(2009)**
7. Extraction of environmental pollutants based on new Nano-solid phase dispersion extraction, National Conference of Chemistry, *KSA,* **(2007)**
8. Synthesis of monodisperse silica Nano-particles using a new sol-gel approach, 7th International Conference on Nano structured Materials, *Germany*, **(2004)**.
9. Nanoscavenger a "green" replacement for solvents in solvent extraction, Essential Analytical Chemistry, for the next 50 years, *Plymouth, UK*, **(2004)**.

BOOKs

1) Advanced maintenance of personal computers, ***ISBN: 9960-38-162-5*, (2001)**
2) Study the quality of wells water in Makkah using Geographic Information Systems**, ISBN: 978-603-8049-36-1, (2013)**
3) Meeting coordination and management strategy**, *ISBN: 978-603-02-8047-6 (2018)***

Patents

no	Patent office	App. No.	Title
1	Saudi patent office	3110	Silica nanoparticles with dual function groups
2	Saudi patent office	3352	Filtration apparatus for toxic gases during fire
3	Saudi patent office	111320693	A reactor for Evaluation of catalytic materials
4	USA patent office	502628570	Method for synthesizing platinum nanoparticles incorporated on silica
5	USA patent office	502568382	An organic-inorganic porous membrane and a method for preparing the same
6	USA patent office	14872182	A Solid state dye laser and methods for preparing the same
7	USA patent office	503603900	Method of Synthesizing Metal-Ascorbic Acid Crystal
8	USA patent office	15834089	Graphite-Titanium-Nanocomposite complex and method of preparation thereof

Awarded

1. Fulbright Visiting Scholar Award, **(2016-2017)**.
2. Excellence Award for Scientific Research and Publishing, giving by King Abdulaziz City for Science and Technology, **(2018)**.
3. Excellence Award for Scientific Research and Publishing, giving by King Abdulaziz City for Science and Technology, **(2014).**
4. Excellence Award for Scientific Research and Publishing, giving by King Abdulaziz City for Science and Technology, **(2013)**.
5. Nominated by How's is How in the word for outstanding achievement, **(2013)**.
6. Chartered Chemist (CChem) awarded by the Royal Society of Chemistry (RSC), **(2012)**.
7. King Abdulaziz City for Science and Technology, Advanced Technology Fund, **(2011)**. (Develop new nano materials for air purification)

8. Certificate of Appreciation from His Royal Highness Prince Muqrin bin Abdulaziz **(2009)**.
9. Singapore Cooperation Program Certificate Awards, **(2008)**
10. King Abdulaziz City for Science and Technology Advanced Technology Fund, **(2007)**.
11. (Using Nano materials for extraction of Narcotic by SPDE)
12. University of Southampton Prize of Nano-Chemistry, Chemistry Department, **(2004)**.
13. Nominated by Head of School of Chemistry University of Southampton for Postgraduate Industry Program, sponsored by Royal Society of Chemistry, **(2003)**.

Funded Research

1. Evaluation potential of nano and mesoporous materials , developed through chemical process to purify air from toxic gases by catalytic process, (KACST)
2. Thirteen Projects in Nano Applications (collaboration with Northwestern University **(2010-2012)**
3. Evaluation of wells water quality in Makkah, Phase II (KACST) (2011)

Interests and key researches

- Synthesis of Nano-materials for Environmental, Energy and Medical applications.
- Issues related to public health, such as water contamination and air pollution.
- Develop techniques to measure low concentrations of compounds that pose a public health hazard.
- Development of high-efficiency Nano-catalysts

A brief about Prof. Khdary

Prof. Khdary joined governmental work in the field of toxicology in 1991 at Forensic and Toxicology Center Makkah region, Ministry of Health (MOH) Saudi Arabia; He held several positions in continued to work at MOH until 2001, where he had the opportunity to complete his studies for PhD. In 2005, he received a doctorate degree from the University of Southampton in the United Kingdom, After his return to Saudi Arabia he worked in public health beside that, he continuously involved in scientific research through the Toxicology and Research Center, where he developed a patented and published new method of using a duel functionalized nanoparticle for drug detection and scavenging from drinking water.

In 2010 he designated to be assistant professor in research at King Abdulaziz City for Science and Technology (KACST) in the city of Riyadh. He continued in this field of scientific research in nano and mesoporous materials for environmental, medical and energy applications. In addition, he assigned in many administrative positions, he as well working part-time as a consultant at the Ministry of Health. Prof. Khdary developed a new method of water treatment and detection of pollutants, this method is known as the Nano Solid Phase Dispersion Extraction Technique "Nanoscavenger Technique". He published many papers in determination of water pollutant using Nanoscavenger Technique". Prof. Khdary research has continued in the area of environmental pollutions treatment, especially in water and air pollution. Recently, he carried out an extensive study in the field of the use of satellites imaging in determining the distribution of pollutants in water sources of one of the regions of the Kingdom of Saudi Arabia and considered the results of this study are significant source of the information on the use of satellite technology to identify the paths and distribution of water pollutants. Recently, he investigated the effect of depositing metal nanoparticles on silica for carbon dioxide sequestration; the study shoes that the metal nanoparticles enhance the CO_2 sequestrating, particularly with Cu nanoparticles. The work has been published in the journal of Materials Chemistry in Royal Society of Chemistry. Prof. Khdary continuing his research in the field of innovation of new inexpensive materials to deal with arsenic contamination in water; which becomes a global problem. In addition, he involves in developing new nano-materials for environmental and medical applications.