TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B post-doc fellowship with the ID = 5028.

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	El Hachimi
Name	Abdel-Ghafour
Date of birth	18 June 1987

PRESENT OCCUPATION

Appointment	Structure
Postdoctoral researcher	Institute for Renewable Energy, IER- Nacional Autonomous University of Mexico.

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree (Bachelor)	Physics	Mohammed V, Rabat	2009
Master	Computational Physics	Mohammed V, Rabat	2011
Ph.D.	Computational Materials	Mohammed V, Rabat	2016
Degree of medical specialization	----	----	----
Degree of European specialization	----	----	----
Other			

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

Università degli Studi di Milano - Divisione Stipendi e Carriere del Personale
Ufficio Contratti di formazione e Ricerca
Via Sant'Antonio 12 - 20122 Milano, Italia
Assegni.postdoc@unimi.it

FOREIGN LANGUAGES

Languages	level of knowledge
English	Good level
Spanish	Native
French	Good level
Arabic	Native

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2018-2020	Postdoctoral scholarship, DGAPA, Nacional Autonomous University of Mexico.
2020-2021	Postdoctoral scholarship, CONACYT, Nacional Autonomous University of Mexico.

TRAINING OR RESEARCH ACTIVITY

description of activity
Postdoctoral position: Nacional Autonomous University of Mexico, Mexico. (2018 – 2021). Informal researcher position, laboratory of Condensed Matter and Interdisciplinary Sciences (LaMCScI), Faculty of science, Mohamed V university, Morocco. (2015–2017) Teaching activities in material sciences, magnetic materials and numerical methods (Mathematica, MATLAB) for students of graduate studies. Department of Physics, Faculty of sciences Mohamed V University, Morocco. (2015–2017). Postdoctoral Research training, the Autonomous University of Madrid (UAM), Spain. Subject: « Theoretical study of nanocontacts with rare earth atoms especially Eu and Gd atoms for nanoelectronic applications. Supervisor: Dr. Juan José Palacios. June 2016 – September 2016.

PROJECT ACTIVITY

Year	Postdoctoral project
2016-2016	Theoretical study of nanocontacts based on rare earth especially Eu and Gd atoms for nanoelectronic applications.
2019-2020	First-principles DFT study and Kinetic Monte Carlo Modelling of radiation effects in solids.
2020-2021	*Estudio a primeros principios de la difusión y adsorción de átomos de Li en la interfaz grafeno/TiO2.*

Università degli Studi di Milano - Divisione Stipendi e Carriere del Personale
Ufficio Contratti di formazione e Ricerca
Via Sant'Antonio 12 - 20122 Milano, Italia
Assegni.postdoc@unimi.it

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place
08 June, 2021	Talk entitled 'Energy storage in Na-ion battery through carbon and doped carbon anode materials. Instituto Tecnológico y de Estudios Superiores de Monterrey, seminar.	State of Mexico, Mexico
23-27 November, 2020	Audiovisual presentation: "*Coloquio de supercomputo 2020 (DGTIC- UNAM)*". "Understanding the improvement of Na-ion batteries by tailoring carbon/doped-carbon composites with NP adsorption: A DFT study".	Cuernavaca, Mexico
9-13 November, 2020	Course entitled "*XV Escuela de Ciencia de Materiales y Nanotecnología* 2020" organized by IIM, UNAM materials.	Morelia, Mexico
6-11 October, 2019	National Congress of Physics (Mexico).	Tabasco, Mexico.
10-12 June, 2019	Organizer of the workshop entitled: "10º. Taller de Dinámica y Estructura de la Materia", ICF, UNAM.	Cuernavaca, Mexico
11-14 May, 2019	Meeting entitled "*la Novena Reunión Anual de la División de Estado Sólido de la Sociedad Mexicana de física*".	Veracruz, Mexico
10-12 Mai, 2017	1st International Materials Science Engineering For Green Energy Conference » (IMSEGEC-17) Organized by Al Akhawyane University.	Ifrane, Morocco
25-29 Avril, 2016	School «Theoretical solid-state chemistry: Theory and simulations" organized by Zaragoza scientific for advances modeling.	Zaragoza Spain.
10-17 August, 2014	Conference «The International Conference of Physics Students (ICPS) » organized by « Intenrational Association of Physics Students » (IAPS).	Heidelberg, Germany
22-26 September, 2014	*1ere Edition sous le thème:" le stockage d'hydrogène, méthodes de calcul de la structure électronique et des propriétés magnétiques*".	Rabat, Morocco
30-01 November, 2013	Conference: 2th International Conference on Condensed Matter and Statistical Physics (ICCMSP-2013).	Errachidia, Morocco
4–8 November, 2013	Workshop «Computational exploration of atomistic structures and interrelation with physical properties"	Dresden, Germany

Università degli Studi di Milano - Divisione Stipendi e Carriere del Personale
Ufficio Contratti di formazione e Ricerca
Via Sant'Antonio 12 - 20122 Milano, Italia
Assegni.postdoc@unimi.it

	et Tutorial "hands-on-FPLO code"» organized by International Center of Theoretical Physics.	
30-01 November, 2012	School on Advances in Quantum Information: Theory and Applications ICTP -International Centre for Theoretical Physics.	Rabat, Morocco

PUBLICATIONS

Chapter book

Abdel Ghafour El Hachimi , Abdellah El Kenz , "Random crystal field effect on the kinetic Ising spin Blume Capel", AP LAMBERT Academic Publishing (2017-04-07).

Articles in reviews

1- Naveen Kumar Reddy Bogireddy, Abdel Ghafour El Hachimi, Jesús Muñiz, Ana Laura Elías , Yu Lei, Mauricio Terrones, Vivechana Agarwal. Integration of Nitrogen-Doped Graphene Oxide Dots with Au Nanoparticles for Enhanced Electrocatalytic Hydrogen Evolution. (Accepted, ACS Applied Nano Materials 2021). IF=5.097; Q1

2- A. G. El Hachimi, Jesús Antonio Jiménez Juárez, Jesús Muñiz. Understanding Li intercalation based on TiO2/carbon for high-performance lithium-ion battery anodes: A DFT study. (In preparation, 2021).

3- Asiel Corpus, Abdel Ghafour El Hachimi, et al. Quest of battery materials: Ion metal-electrolyte interactions. (In preparation, 2021).

4- Abdel Ghafour El Hachimi, Alfredo Guillén-López, Oscar A.Jaramillo- Quintero, Marina E.Rincón, Jesús Muñiz. Exploring the enhanced performance of Sb2S3/doped-carbon composites as potential anode materials for sodium-ion batteries: a DFT approach. Int. J. Quantum Chem. 2021, e26779. IF= 2.444; Q2

5- Hugo Alejandro Borbón-Nuñez, Jesús Muñiz, Abdel Ghafour El Hachimi et al. Effect of oxygen based functional groups on the nucleation of TiO2 by atomic layer deposition: A theoretical and experimental study. Materials Chemistry and Physics 2021, 267, 124588. IF=4.094; Q2

6- A. El Yousfi, H. Bouda, A. G. El Hachimi, A. Benyoussef, M. A. Arshad & A. El Kenz. Enhanced optical absorption of rutile TiO2 through (Sm, C) codoping: a first-principles study. Optical and Quantum Electronics 2021, 53 (95). IF=2.084; Q2

7- O. A. Jaramillo-Quintero, R. V. Barrera-Peralta, A. G. El Hachimi, A. Guillén-López, O: Pérez,E. Reguera, et al. "Understanding the interaction between heteroatom-doped carbon matrix and Sb2S3 for efficient sodium-ion battery anodes". Journal of Colloid and Interface Science 2020, 585, 649–659. IF=8.128; Q1

8- R. Cabrera-Trujillo, A. G. El Hachimi. "Calculation of the electronic, nuclear, rotational, and vibrational stopping cross sections for H atoms irradiation on H2, N2 and O2 gas targets at low collision energies". Journal of Physics B: Atomic, Molecular and Optical Physics 2020, 53(13), 135203. IF=1.917; Q2

9- A. G. El Hachimi, O. Oubram & M. Sadoqi. "First-principles study of electronic magnetic and optical properties of black phosphorene adsorbed with Ti and S". Superlattices and Microstructures 2020, 146, 106673. IF=2.658; Q2

10- A. G. El Hachimi, M.O. NE, A. El Yousfi, A. Benyoussef, & A. El Kenz "Enhancing optical absorption in visible light of ZnO co-doped with europium and promethium by first-principles study through modified Becke and Johnson potential scheme". Journal of Rare Earths 2019, 37(4), 416–421. IF=3.712; Q2

11- S. S.Ahmed, L. Bahmad, A. El Yousfi, A. Benyoussef, A. El Kenz, & A. G. El Hachimi. "Mixed spin-1 and spin-3/2 Blume-Emery-Griffiths model with external field on a honeycomb lattice". Superlattices and Microstructures 2018, 123, 1–11. IF=2.658; Q2

Università degli Studi di Milano - Divisione Stipendi e Carriere del Personale
Ufficio Contratti di formazione e Ricerca
Via Sant'Antonio 12 - 20122 Milano, Italia
Assegni.postdoc@unimi.it

12- S. S. Ahmed, A. Nid-Bahami, A. G. El Hachimi, L. Bahmad, A. Benyoussef & A. El Kenz. "Kinetic Phase Transition in the Semi-infinite Spin-1 Ising Model Under a Periodically Oscillating Magnetic Field". Journal of Superconductivity and Novel Magnetism 2018, 31(3), 805–814. IF=1.506; Q3
13- R. Bouachraoui, A. G. El Hachimi, Y. Ziat, L.Bahmad, & N. Tahiri. "Investigation of electronic and magnetic properties of FeS: First principle and Monte Carlo simulations". Solid State Communications 2018, 274, 46–50. IF=1.804; Q2
14- M. El Bachra, H. Zaari, A. Benyoussef, A. El Kenz & A. G. El Hachimi. "First-principles calculations of van der Waals and spin orbit effects on the two-dimensional topological insulator stanene and stanene on Ge (111) substrate". Journal of Superconductivity and Novel Magnetism 2018, 31(8), 2579–2588. IF=1.506; Q3
15- M. O. NE, A. G. El Hachimi, M. Boujnah, A. Benyoussef, A. El Kenz et al. "Comparative study of electronic and optical properties of graphene and germanene: DFT study". Optik 2018,158, 693–698. IF=2.443; Q2
16- S. Sabri, A. G. El Hachimi, M. El Yadari, A. Benyoussef & A. El Kenz. "Kinetic phase transitions for the semi-infinite Ising model with bulk S= 1 and a free surfaceσ= 12 under an oscillating magnetic field". Physica A: Statistical Mechanics and its Applications 2018, 511, 207–217. IF=3.263; Q2
17- A. G. El Hachimi, H. Zaari, M. Hamedoun, A. Benyoussef, A. El Kenz, & O. Mounkachi. "Experimental and theoretical investigation of Nd doped ZnO". Journal of Magnetism and Magnetic Materials 2017, 444, 416–420. IF=2.993; Q2
18- M. O. NE, A. Abbassi, A. G. El Hachimi, A. Benyoussef, H. Ez-Zahraouy, A. El Kenz et al. "Electronic, optical properties and widening band gap of graphene with Ge doping". Optical and Quantum Electronics 2017. 49(6), 218. IF=2.084; Q2
19- A. G. El Hachimi, O. Dakir, S. S. Ahmed, H. Zaari, M. El Yadari, A. Benyoussef, & A. El Kenz. "Random crystal field effect on the kinetic spin-3/2 blume–capel model under a time-dependent oscillating field". Physica A: Statistical Mechanics and its Applications 2016, 458, 248–258. IF=3.263; Q2
20- H. Zaari, A. G. El Hachimi, A. Benyoussef, & A. El Kenz. "Comparative study between TB-mBJ and GGA+ U on magnetic and optical properties of CdFe2O4". Journal of Magnetism and Magnetic Materials 2015, 393, 183–187. IF=2.993; Q2
21- A. G. El Hachimi, M. El Yadari, A. Benyoussef, A. El Kenz, & L. Bahmad. "Kinetic phase transition in the semi-infinite ising model under an oscillating field". Physica A: Statistical Mechanics andits Applications 2014, 410, 370–379. IF=3.263; Q2
22- A. G. El Hachimi, H. Zaari, A. Benyoussef, M. El Yadari, & A. El Kenz. "First-principles prediction of the magnetism of 4f rare-earth- metal-doped wurtzite zinc oxide". Journal of rare earths 2014, 32(8), 715–721. IF=3.712; Q2
23- A. G. El Hachimi, H. Zaari, M. Boujnah, A. Benyoussef, M. El Yadari, & A. El Kenz. "Ferromagnetism induced by oxygen related defects in CeO2 from first principles study". Computational Materials Science 2014, 85, 134–137. IF=3.30; Q1
24- B. Khalil, S. Naji, H. Labrim, M. Bhihi, A. G. El Hachimi et al. "Magnetic properties of SrO doped with 3d transition metals". Journal of Superconductivity and Novel Magnetism 2014, 27(1), 203– 208. IF=1.506; Q3
25- H. Zaari, A. G. El Hachimi, M. Boujnah, A. Benyoussef, A. El Kenz et al. "Electronic structure and X-ray magnetic circular dichroic of Neodymium doped ZnTe using the GGA+U approximation". Computational materials science 2014, 93, 91–96. IF=3.30; Q1
26- H. Zaari, M. Boujnah, A. G. El Hachimi, A. Benyoussef, & A. El Kenz. "Optical properties of ZnTe doped with transition metals (Ti, Cr and Mn)". Optical and Quantum Electronics 2014, 46(1), 75–86. IF=2.084; Q2

Congress proceedings

Università degli Studi di Milano - Divisione Stipendi e Carriere del Personale
Ufficio Contratti di formazione e Ricerca
Via Sant'Antonio 12 - 20122 Milano, Italia
Assegni.postdoc@unimi.it

1- H. Zaari, M. Boujnah, A. G. El Hachimi, et al. “Electronic structure, optical and magnetic properties of Zn1−xMxTe (M= Ti, Cr and Mn) Ab initio calculations”. In 2014 International Renewable and Sustainable Energy Conference (IRSEC)(pp. 611–614). IEEE 2014.

2- H. Zaari, M. Boujnah, A. G. El Hachimi, A. Benyoussef, & A. El Kenz “XMCD studies and magnetic properties of ZnTe doped with Ti, Cr, Mn and Co”. Moroccan Journal of Condensed Matter 2015, 17(2).

OTHER INFORMATION

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: Cuernavaca Mor. Mexico, 21.08.2021

SIGNATURE

Università degli Studi di Milano - Divisione Stipendi e Carriere del Personale
Ufficio Contratti di formazione e Ricerca
Via Sant’Antonio 12 - 20122 Milano, Italia
Assegni.postdoc@unimi.it