

# *Curriculum vitae*



**Pr. Abdeslam EL BOUARI**

Full Professor (PES)  
Ben M'Sik Faculty of Sciences, Casablanca  
Hassan II University, Casablanca

## I. PERSONAL INFORMATION

<b>Last Name</b>	EL BOUARI
<b>First Name</b>	Abdeslam
<b>Date of Birth</b>	26 / 12 / 1966
<b>Civil Status</b>	Married (two sons)
<b>Current Job</b>	Full Professor (PES, Grade C)
<b>Establishment</b>	Ben M'Sik Faculty of Sciences
<b>Date of recruitment</b>	29 / 09 / 1996
<b>Workplace address</b>	BP 7955 Avenue Driss Elharti Casablanca
<b>Home address</b>	Lot Nassim Islane, N° 558, 20000 Casablanca
<b>Phone</b>	+212 662124075
<b>E-mail</b>	<a href="mailto:elbouari@gmail.com">elbouari@gmail.com</a> ; <a href="mailto:abdeslam.elbouari@univh2c.ma">abdeslam.elbouari@univh2c.ma</a>

## II. EDUCATION AND DEGREES

Diplômes	Institution	Années
PhD (Doctorat d'Etat Es Sciences) in Materials Physical Chemistry	Ben M'Sik Faculty of Sciences, Hassan II University of Mohammedia-Casablanca	2005
3rd Cycle Thesis, in Solid State Chemistry	Ben M'Sik Faculty of Sciences, Hassan II University of Mohammedia-Casablanca	1995
Master in Solid State Chemistry (CEA)	Faculty of Sciences in Rabat, Mohammed V University, Rabat	1990
Bachelor of Sciences ; Chemistry	Ben M'Sik Faculty of Sciences, Hassan II University of Mohammedia-Casablanca	1989
DEUG in Physics and Chemistry	Ben M'Sik Faculty of Sciences, Hassan II University of Mohammedia-Casablanca	1987
Baccalaureate - Experimental Sciences	High School My Idriss, Casablanca	1984

Certifications & Training	Institution	years
Certificate in Competitive Intelligence and Creativity through Patents	AUF And CNRST	2019
Certificate in Project Development Training	Hassan II University of Mohammedia-Casablanca	2006
Certificate in Energy Audit according to ISO 50002 Standard	Bureau VERITAS Maroc, GTZ	2018
Training on Concentrated Solar Thermal	REUNET, MASEN	2016

Recognitions / Prizes	organization	Years
Best Scientific Publication	Journal "Solar for Africa and Renewable Energies" IRESEN	2019
Best Scientific Article Award published in: The Journal of Applied Nanoscience by Springer 2013 (2013 Best Paper Award)	King Abdulaziz City for Science and Technology	2014

Langue	Mention
Arabic	Fluent
French	Fluent
English	Intermediate

### III. University and Professional Experiences and Responsibilities

#### 1- Head of the Chemistry Department at Ben M'Sik Faculty of Sciences

Period: 2009 - 2012

61 Faculty Members;

10 Technical and Administrative Staff"

I undertook the following responsibilities :

- Management of the department's operating and investment budget
- Management of the teaching workload for 61 faculty members
- Management of the department's infrastructure
- Responsible for the maintenance and procurement of scientific equipment
- Pedagogical management ; Responsible for implementing the pedagogical reform in the Chemistry Department
- Responsible for the training of pedagogical assistants (8) on the storage of chemical products"

#### 2- Director of the Laboratory of Materials and Applied Physico-chemistry

Period : 2011 to 2021

##### - Director of the Laboratory of Physical Chemistry, Materials, and Catalysis

Period : 2021 to Present.

#### Achievements and Added Value

The LPCMA laboratory under my leadership was accredited in 2011 according to the criteria of Hassan II University in Casablanca.

My main activities in this role can be summarized as follows:

- Management of human resources and equipment
- Budget management (operational and investment) allocated to our laboratory
- Organization of work meetings
- Organization of seminars with doctoral students
- Preparation of the laboratory's activity report
- Supervision of students (doctoral and master's)
- Organization of national (75%) and international (25%) workshops, seminars, conferences, and congresses
- Participation in scientific meetings
- Representation of the laboratory both within and outside the university
- Publication of articles and presentations
- Management of budgets allocated to the laboratory from various projects
- Preparation of budget employment programs, equipment requests, monitoring of purchase orders, and contracts."

#### 3- Coordinator of the Master's in Materials and Energy Engineering (MGME)

Period : 2009 to present

Ben M'Sik Faculty of Sciences

"These programs were developed in collaboration with:

- LPEE (Agreement signed by the Faculty and LPEE)
- Union Cérame de Berrechid Company
- SEVAM Company
- LSR Engineering Office
- LEONI Company
- MAFER Company

In the context of this responsibility, my main activities, covering operations from the design of the program to admission, maintenance, and teaching, include:

- Convincing industrial partners to participate in teaching within our programs
- Signing approximately sixty agreements with companies for hosting our students for their internships
- Accreditation by the National Commission for Higher Education Coordination (CNCEC)
- Graduating around a dozen cohorts of students."

#### **4- Coordinator of the University Specialized Master's Program in Energy and Management"**

Période : 2022 to Present

Ben M'Sik Faculty of Sciences / Mohammedia Faculty of Science and Technology

#### **5- Member of the Scientific Committee**

Période : 2017 to 2020

Ben M'Sik Faculty of Sciences

My main activities in this role can be summarized as follows :

- Development of the evaluation criteria for faculty members at FSBM"
- Ranking and promotion of faculty members

#### **6- Member of the Board of Establishment**

Period : 2009 à 2011

Period : 2012 à 2014

##### ***6.1- Coordinator of the Communication and Information Commission***

Period : 2009 à 2011

##### **Achievements and Added Value**

- Facilitating Information, Guidance, and Awareness Days
- Organizing Cultural and Sports Events
- Arranging Caravans to Visit High Schools in Casablanca"

##### ***6.2- Member of the Budget Committee***

Period : 2012 à 2014

##### ***6.3- Member of the Research Committee***

Period : 2012 à 2014

##### ***6.4- Member of the Pedagogical Committee***

Period : 2009 à 2011

Period : 2012 à 2014

## **7- Member of the University Council**

Period : 2015 to 2017

### **Achievements and Added Value**

Participation in various tasks within the Ad Hoc Committees to establish the university's internal regulations, as well as those for continuing education

#### **7.1- Member of the University Scientific Research Committee**

Contribution to the accreditation of the university's research structures (Teams, Laboratories, and Thematic Research Centers).

- Participation in the establishment of a research charter: Structuring Charter and Evaluation Charter.
- Contribution to the establishment of a research management platform NIBRAS, which compiles the scientific output of researchers.
- Participation in the development of a research budget procedure
- Expertise of research laboratories for their accreditation.

#### **7.2- Member of the UH2C Pedagogical Affairs Committee**

- Contribution to the development of a charter for initial education at UH2C.
- Participation in the organization of continuing education through the establishment of internal regulations.
- Expertise of continuing education programs for accreditation.
- Expertise of initial education programs for submission to the Ministry."

#### **7.3- Member of the Information Systems Committee (COMSI) of UH2C**

- Proposing an action plan for implementing the concept of 'Digital University' and the establishment of the 'Digital Master Plan of UH2C.'
- Recommending strategic directions to the University Council (CU) regarding information systems and digital usage.
- Providing insight and guidance on strategic choices for the production, dissemination, and protection of UH2C's digital resources.
- Supporting the policy for enhancing the pedagogical and scientific output of the university institutions within UH2C.
- Reviewing projects presented to the University Council in terms of information systems."

## **8- Founding Member of the Materials and Energy Center at the University**

Period : 2016 To Present

16 Laboratories

49 Teams

The research areas related to materials and energy have been consolidated into a thematic research center called 'Materials and Energy,' focusing on 2 projects:

- Project 1: Multi-source Renewable Energy Systems for Natural Resource Valorization and Sustainable Development (Leaders: Prof. A. El Bouari, Prof. D. Saifaoui)

- Project 2 : Development, Characterization, Modeling, and Valorization of Materials and Nanomaterials: Applications in the fields of Mobile Technology, Construction, Energy, and Water (Leader: Prof. M. Zahouily, Prof H. Hannache, Prof A. EL BOUARI).

The allocated budget is 4,321,816.23 Moroccan Dirhams for the investment budget and 815,994.51 Moroccan Dirhams for the operational budget.

- Participation in budget management, preparation of procurement plans (CPS), purchase of scientific equipment (SEM, Raman, IR, DSC, XRF, PVD, solid-state UV, dilatometer, etc.), and
- Training of doctoral students in analytical techniques."

## **9- Member of the Department of Chemistry College**

Period : 2009 to 2011

Period: 2015 to Present (4 terms)

Coordination of cultural and scientific activities and external relations with the Chemistry Department from 2009 to 2011  
Gérer l'état des lieux et les besoins des produits chimiques et matériels pour TP avec les préparateurs et les enseignants

- Managing the inventory and chemical/material needs for practical work with lab assistants and teachers
- Scheduling practical sessions
- Monitoring contracts and purchase orders until the receipt of ordered materials and products
- Developing and distributing department, program, and laboratory guides
- Acting as an interface between the department and external companies
- Budgeting for each practical work session"

## IV. RESEARCH ACTIVITIES

### Summary of Research Output

Nature of Research Output	Number
- Indexed Publications	156
- Patents	03
- Scientific and Technical Awards	02
- Publisher of Books	04
- Books	04
- Communications	134
- Conferences	15
- Supervised Doctoral Theses	17
- Supervised Postdoctoral Qualifications	05
- Supervised DESA and Master's Degrees	92
- Research Projects	16
- Congress Organization	19

#### 1- Publications in indexed journals, Contributions in referenced books, and Communications

- More than 150 publications in journals indexed with Scopus and Thomson Reuters.

[https://scholar.google.com/citations?hl=fr&user=\\_pKb8hgAAAAJ&view\\_op=list\\_works](https://scholar.google.com/citations?hl=fr&user=_pKb8hgAAAAJ&view_op=list_works)

- More 100 Communications at National and International Conferences

#### **10 MOST POPULAR ARTICLES**

- 1) Experimental study of thermal characteristics of bio-based textiles integrating microencapsulated phase change materials, A El Majd, Z Younsi, N Youssef, N Belouaggadia, A El Bouari, Energy and Buildings, 297, 113465, 2023
- 2) Design and development of a highly efficient reusable zeolite impregnated ZnAl<sub>2</sub>O<sub>4</sub> catalyst for biodiesel production, Y Bouhaj, S Sair, H Ait Ousaleh, O Amadine, H Maati, M Zahouily, A Faik, Environmental Science and Pollution Research 30 (37), 86773-86789, 2023.
- 3) Study of fired clay bricks with coconut shell waste as a renewable pore-forming agent: Technological, mechanical, and thermal properties, Z Moujoud, A Harrati, A Manni, A Naim, A El Bouari, O Tanane, Journal of Building Engineering 68, 106107, 2023.
- 4) Crystallography at non-ambient conditions and physical properties of the synthesized double perovskites, Sr<sub>2</sub> (Co<sub>1-x</sub> Fe<sub>x</sub>)TeO<sub>6</sub>, A Zaraq, B Orayech, JM Igartua, A El Bouari, DH Gregory, TM Gesing, Dalton Transactions 52 (13), 4086-4102, 2023.



- 5) Design, synthesis and structural properties of borate glasses: towards an alkali-free bioactive glass, S Aqdim, M Naji, A Chakir, A El Bouari, Journal of Non-Crystalline Solids 597, 121876, 2022.
- 6) Na<sub>3</sub>CoZr (PO<sub>4</sub>)<sub>3</sub> as high-voltage cathode material for sodium-ion batteries, A Chari, K El Ouardi, M Tayoury, M Aqil, B Orayech, A El Bouari, J Alami, Journal of Power Sources 548, 232046, 2022.
- 7) Enhanced inorganic salts stability using bentonite clay for high-performance and low-cost thermochemical energy storage, HA Ousaleh, S Sair, S Mansouri, Y Abboud, M Zahouily, A Faik, Journal of Energy Storage 49, 104140, 2022.
- 8) Thermal and economic evaluation of new insulation materials for building envelope based on textile waste, A Gounni, MT Mabrouk, M El Wazna, A Kheiri, M El Alami, A El Bouari, Applied Thermal Engineering 149, 475-483, 70, 2019
- 9) Development of a new eco-friendly composite material based on gypsum reinforced with a mixture of cork fibre and cardboard waste for building thermal insulation, S Sair, B Mandili, M Taqi, A El Bouari, Composites Communications 16, 20-24, 73, 2019
- 10) Biosynthesis, characterization and antimicrobial activity of copper oxide nanoparticles (CONPs) produced using brown alga extract (*Bifurcaria bifurcata*), Y Abboud, T Saffaj, A Chagraoui, A El Bouari, K Brouzi, O Tanane, Applied nanoscience 4, 571-576, 534, 2014

## 2- Invention patents

- Patent filing Number: 37225, Filing Date: July 18, 2014  
Ecological composite materials based on polyurethane and vegetable fibers adapted to thermal insulation.  
Inventors: A. EL BOUARI, Omar TANANE, Y. Abboud, A. Oushabi, S. SAIR
- Patent filing Number: 37060, Filing Date: May 23, 2014  
Manufacture Process of non-toxic corrosion inhibitor from date palm wood  
Inventors: Y. ABBOUD, Omar TANANE, A. EL BOUARI.
- Patent filing Number 34930 Filing Date June 4, 2012.  
Process for recovering nickel from nickel plating bath  
Inventors: A. EL Bouari, S. Mourad, Omar TANANE, M. Larzek.

## 3- Prototype developed

- Development of the first Moroccan solar refrigeration tricycle « IRESEN Project : Solar Fridge, 2013-2016 ».

Project Manager : A. EL BOUARI.

The prototype is a mobile solar refrigerator mounted on an electric tricycle. The fridge operates on solar energy, thanks to photovoltaic panels installed on its walls, and it has a 16-hour autonomy. The box is insulated with natural materials, specifically date palm wood."

- Development of a prototype 'Mobile Solar Brackish Water Desalination Station' installed at the IRESEN platform in Benguerir, 2016.

The prototype is a pre-industrial installation of a mobile and modular unit for brackish water treatment. This unit allows the study of the real-world performance of individual reverse osmosis (RO) and membrane distillation (MD) processes, as well as their coupling using photovoltaic and thermal solar energy

## 4- Referenced Books / Journals

## Book Publisher

- Deputy Editor of the REINNOVA Journal, Journal of Entrepreneurship and Innovation, ISSN: 2508-9463  
<http://revues.imist.ma/index.php?journal=REINNOVA&page=about>
- Responsible of the edition "Proceedings of a meeting REMCES XII" - MATEC Web of Conferences Volume 5 (2013), ISBN: 9781632664563  
<https://www.matec-conferences.org/articles/mateconf/abs/2013/03/contents/contents.html>
- Responsible of the edition "Proceedings of the Workshop "Materials & Energetics", Journal of Materials and environmental Science, Content Vol.6, N12, 2015 pp. 3388-3683  
<http://www.jmaterenvironsci.com/Journal/vol6-12.html>
- Responsible of the edition Proceedings « Scientific Meetings on the Environment », RSE-2016, Volume 1, 2016, ISBN : 978-9954-38-622-4

## Books

- « Corrosion et protection de l'acier inoxydable 316L dans l'industrie » Editions Universitaires Européennes, O. TANANE, Y. ABBoud, A. EL BOUARI, 2017, ISBN : 978-3-639-72223-9  
<https://www.morebooks.de/store/gb/book/corrosion-et-protection-de-l%E2%80%99acier-inoxidable-316l-dans-l%E2%80%99industrie/isbn/978-3-639-72223-9>
- "Magnetic water impacts and perspective", Mghaiouini Redouane ,El Bouari Abdeslam, Mohamade Monkade.December 2020. Publisher: European University Publishing. ISBN: 978-620-2-54651-5
- « Étude Minéralogique et Chimique des Sables ». Mghaiouini Redouane , El Bouari Abdeslam, Mohamade Monkade. 2022 Publisher: European University Publishing.ISBN: 9 7 8 - 6 1 3 -9 5 0 - 4 3 2- 9
- « Elaboration d'un mortier à base de poudre de machefers de charbon » Redouane Mghaiouini, Mohamed Monkade, Abdeslam El Bouari. novembre 2021.Publisher: European University Publishing.ISBN: 978-613-9-52593-5

## **5- Supervision of Research Projects**

### Doctorate – PhD (18)

- **Karim El Ouardi( 2023)**  
« Development and Characterization of TiO<sub>2</sub>-Based Negative Electrode Materials for Lithium-Ion Batteries ». Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca
- **Ibtissam CHARTI (2022)**

« Bio-sourced Chemical Synthesis of Silver Nanoparticles and Cellulose-Ag Nanocomposites under Microwave Irradiation for Bactericidal, Catalytic, and Environmental Applications ».

Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca.

- **Redouane MAGHAIOUINI (2021)**

« "Impact of Magnetized Water on the Physicochemical Properties of Materials ».

Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca.

- **Hanane AIT OUSALEH (2021)**

« Development of Potential Systems for Thermal Energy Storage via Thermochemical Pathways ».

« Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca

- **Ayoub AZIZ (2021)**

« Synthesis and Characterization of New Geopolymers Based on Natural Geomaterials and Industrial Wastes ».

Scientific Institute, Mohammed V University of Rabat

- **Sanaa BENYOUNOUSSY (2021)**

« Niobophosphate Dielectric Glasses and Vitroceramics for Electrostatic Energy Storage ».

Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca

- **Ahmed MANNI (2021)**

« Contribution to the Valorization of Geomaterials from the Moroccan Rif: Applications in Refractory, Membrane, and Composite Ceramics ».

Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca.

- **Abdelwahed CHARI (2020)**

« Research, synthesis, characterizations and applications (Water @ Energy)»

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

- **Ouahiba MRAJJI (2020)**

« Valorization of Biomass for the Development of Bio-Inspired Thermal Insulators ».

Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca

- **Mohamed EL WAZNA (2019)**

« Theoretical and Experimental Contributions to the Valorization of Textile Waste in Building Thermal Insulation ».

Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca.

- **Asmaa ZARQA (2019)**

Study of crystal structures and phase transitions in double perovskite oxides based on Tellurium

Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca

- **Said SAIR (2018)**

" Contribution to Biomass Valorization in Thermal Insulation and Corrosion Inhibition "

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

- **Abdessamad OUSHABI (2018)**

*"Valorization of Moroccan Date Palm Wood Waste: Bio-Composites for Thermal Insulation and Eco-Friendly Wood Adhesives ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

- **Khadija GOURAY (2018)**

*« Solar-Powered Reverse Osmosis for Brackish Water Desalination ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

- **Khadija ALLAM (2018)**

*« Thermal Solar Membrane Distillation of Brackish Water ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

- **Hafid AITENNEITE (2015)**

*« Synthesis and Characterization of Materials and Nanomaterials for Catalysis: Application to the Reduction of 4-Nitrophenol ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

- **Hanane BENSAID (2014)**

*« Synthesis, Properties, and Physico-Chemical Characterization of New Structural Materials: Quadratic Tungsten Bronze (TTB) and Lyonsite ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca.*

- **Hasnaa SINOUEH (2014)**

*« Glasses and Vitroceramics in the Systems  $\text{SrO-TiO}_2\text{-P}_2\text{O}_5$ ,  $\text{NaPO}_3\text{-MTiO}_3$ ,  $\text{Na}_2\text{O-AO-TiO}_2\text{-B}_2\text{O}_3\text{-P}_2\text{O}_5$ ,  $\text{C}_2\text{O-SrO-TiO}_2\text{-B}_2\text{O}_3\text{-P}_2\text{O}_5$  ( $M = \text{Sr, Ba}_{0.5}\text{Sr}_{0.5}$ ,  $\text{Ba}$ ;  $A = \text{Sr, Ba}$ ;  $C = \text{Na, Li}$ ): Characterization, Structural Study, and Electrical Properties ».*

*Faculty of Sciences and Techniques, Errachidia*

## 6- University Habilitation (5)

- **Boubker MEHDAOUI (2021)**

*« Magnetic Materials: Synthesis and Study of Correlation Between Structural and Magnetic Properties ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

- **Chaouki SADIK (2019)**

*« Contribution to the Valorization of Moroccan Geomaterials and Industrial Wastes in the Field of Ceramics ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca.*

- **Omar TANANE (25 Juillet 2017)**

*"Corrosion, Material Protection, and Valorization: Multicriteria Approaches ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

- **Fahd OUDRHIRI HASSANI (2016)**

*« Synthesis, Functionalization, and Characterization of Thin Films and Bulk Materials ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca.*

- **Younes ABBOUD (2015)**

*« Synthesis, Functionalization, and Characterization of Thin Films and Bulk Materials ».*

*Faculty of Sciences Ben M'Sik, Hassan II University of Casablanca*

## 7- Supervision of end-of-degree projects for DESA and Master's Degrees in Materials Science

*A total of 114 students have been supervised for the completion of their DESA or Master's projects. All of the proposed topics are practical and current in nature, allowing students to enhance their academic education by gaining practical experience and facilitating their transition into the professional world*

## 8- Research Projects

- *Project Member : « Turning phosphogypsum, a by-product, from phosphate industry into valuable low-cost feedstock for thermochemical energy storage systems, UM6P, 2023.*
- *Project Member : AFRICAN CITIES LAB, in collaboration with UM6P in Benguerir and EPFL in Lausanne, Switzerland, for the creation of MOOCs on urban development in Africa, titled 'Photovoltaic Solar Energy and Its Applications for Urban Development : 240 minutes, 2023.*
- *Multithematic Research and Development Project (MRDP) (APRD), « Phosphate Ion-Conductive Materials as Electrolyte for All-Solid-State Batteries », 2022-2024.*
- *Multithematic Research and Development Project (MRDP), "Upcycling of Textile Waste in the Treatment of Heavy Metal and Dye-Contaminated Wastewater, and Thermal Insulation" 2022-2024.*
- *Research Center Project, Hassan II University of Casablanca, "Development of Multi-Source Renewable Energy Systems," 2017-2019.*
- *Research Center Project, Hassan II University of Casablanca, « Development, Characterization, Modeling, and Valorization of Materials and Nanomaterials: Applications in the fields of Mobile Technology, Construction, Energy, and Water » (Leader: Prof. M. Zahouily, Prof H. Hannache, Prof A. EL BOUARI). 2017-2019.*
- *OCP Research Project, "Phosphate Dielectric Glass-Ceramics for Energy Storage," 2016-2018.*
- *Project "Solar Energy and Water Desalination Coupling in Morocco," funded by IRESEN, 2012-2015..*
- *Project "Solar-Powered Tricycle Refrigerator with Local Date Palm Wood-Based Thermal Insulation for the Container," funded by IRESEN, 2013-2016.*
- *Morocco-Tunisia Project "Synthesis and Characterization of Solar Energy Absorbing Doped Glasses for Photovoltaics, 13/TM/36, between Monastir*

*University and FST-Errachidia & Faculty of Sciences Ben M'sik Casablanca," 2013-2015.*

- *ENERGYPHOS Project : « Competitive Lithium-ion Batteries Based on Moroccan Phosphates for Energy Storage and Conversion ». Project Leader: Cadi AYAD University, 2013.*
- *University Hassan 2 Mohammedia, Casablanca, Research Centers Project: "Development and Valorization of Composite and Non-composite Materials in the Field of Water and Energy," 2013.*
- *Center of Excellence, University Hassan 2 Mohammedia, Casablanca : « Study of optimization and development of renewable energy systems, 2011.*
- *Integrated Action - Volubilis Program - Valorization of Phosphates in Electrochemistry and Optics. Period 2010-2013.*
- *CNRST/Morocco - CNRS/France Agreement. New 3d and 4f Transition Element Phosphates for Magneto-Optical Applications. Period: 2010-2013.*
- *Project: PHC VOLUBILIS MA/09/206, "Elaboration of Glass-Ceramics Containing the Ferroelectric Phase BaTiO<sub>3</sub>, Recrystallization of Glasses from the (Ba, Sr)O-TiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>-MoO<sub>3</sub>-B<sub>2</sub>O<sub>3</sub>-P<sub>2</sub>O<sub>5</sub> System, and Crystal Growth Modeling." 2009.*
- *Fincome Project : Guest K. ADIL from the University of Maine in France, 2011.*
- *Fincome Project : Guest Prof. M. ABATAL from the Autonomous University of Carmen, Mexico. 2015.*

## **9- Congress organization**

- *Co-Chair of the Second International Conference on Renewable Energies, Materials, and Applications (ICREAM'22), organized at ENS Casablanca, June 22-24, 2022.*
- *Chair of CREA'19: International Conference on Renewable Energy and Applications, organized at ENS Casablanca, December 4-5, 2019.*
- *Organizing Committee Leader for the Materials and Energetics Workshop, Thursday, May 21, 2015, at ENSAM Casablanca.*
- *Member of the organizing committee: Concentrated Solar Power (CSP) Training Seminar, May 25-28, 2016, in Ouarzazate, Morocco*



- *Member of the organizing committee for a meeting: "Casablanca, What Actions Against Climate Change," Wednesday, March 9, 2016, at the Mohamed Sekkat University Library.*
- *Member of the organizing committee for a symposium: "The Patent, a Strategic Tool for Innovation and Scientific Research Valorization," Thursday, December [day not specified], 2015, at the Faculty of Sciences Ben M'Sik, Casablanca.*
- *Member of the organizing committee for the 4th International Entrepreneurship Symposium, with the theme "Innovative Scientific Research, Technology Transfer, and Entrepreneurship Education," on December 1 and 2, 2016, at FSBM, Casablanca*
- *Member of the organizing committee for the meeting: "Phosphates, Materials, and Environment," on October 27, 2015, in Casablanca.*
- *Member of the organizing committee for the 4th FSB-Enterprise Forum, on April 26, 2011, in Casablanca.*
- *Member of the organizing committee for the 5th National Meeting on Environmental Management and Protection, G-ENVIRO-5, on May 28, 2013, in Casablanca.*
- *Member of the organizing committee for the 12th Moroccan Meeting on Solid State Chemistry (REMCES'XII), from November 21 to 23, 2012, in Casablanca*
- *Member of the organizing committee for the National Meeting of Researchers in Chemistry (RN2C), on May 25-26, 2011, in Casablanca*
- *Organization of a Workshop on Generic Techniques for Manufacturing Electronic Devices in General and Devices for New and Renewable Energies, on October 29-30, 2018, at the Faculty of Sciences Ben M'Sik, Casablanca.*
- *Member of the organizing committee for the International Congress on Solar Energy Research, Technology, and Applications (ICSERTA'2018), held from May 8 to 10, 2018, in Ouarzazate*
- *Member of the organizing committee for the Scientific Day on Wind Energy, held on May 25, 2017, at the Hassania School of Public Works in Casablanca.*
- *Member of the organizing committee for the 2nd edition of the Franco-Moroccan Symposium on Renewable Energies and their Integration into Transport and Distribution Networks, held from April 11 to 13, 2017, at the Faculty of Sciences and Technology in Fès.*
- *Member of the organizing committee for the scientific workshop "Smart Grids & Renewable Energies," held on March 1, 2017, at the Faculty of Sciences Ben M'Sik, Casablanca.*

- *Workshop on research in building energy efficiency was held at the Ecole Normale Supérieure de l'Enseignement Technique (ENSET) in Rabat. The workshop aimed to assess the current state and scientific prospects in the field. January 14, 2017.*
- *Member of the organizing committee for the supplementary training on Grid-Connected Photovoltaic Systems, aimed at Moroccan doctoral students in the Photovoltaic Solar Energy field. The training took place from October 5 to 8, 2015, at the Ecole Supérieure de Technologie in Salé.*

## 10- Conference presentations

- Presentation of the Start-up Project « Solar Fridge », 3ème édition du Forum Innovation et Climat, Montreux, Suisse,
- Speaker : 1st Seminar on Materials and Industrial Innovation (SM2I), « The design of new materials: a cornerstone to meet industrial needs », 2023, Casablanca.
- Speaker: International e-Conference on Advanced Materials and Future Challenges, July 15-16, 2020, ENSA SAFI.
- Speaker : "Thermal Characterization of Local Building Materials in Housing," AMT Workshop, July 9, 2019, Casablanca.
- Speaker : Spring University on Building Energy Efficiency, National School of Applied Sciences, March 21-22, 2019, Khouribga.
- Speaker : "Solar Refrigerator on a Tricycle with Thermal Insulation Using Local Date Palm Wood-Based Container" at the Conference of Presidents of Moroccan Universities, "Universities Facing the Climate Challenge," COP (22) Agora Hall, Marrakech, Tuesday, November 15, 2016.
- Speaker : Training Seminar on Concentrated Solar Thermal (CSP), May 25-28, 2016, in Ouarzazate, Morocco.
- Facilitator of a workshop on "Green Spaces" during the meeting: "Casablanca, What Actions Against Climate Change," on Wednesday, March 9, 2016, at the Mohamed Sekkat University Library.
- Speaker : "Bio-composite Materials for Thermal Insulation" at the Materials and Energy Workshop, May 21, 2015, ENSAM Casablanca.
- Facilitator of 3 workshops: Bruker OpenLab Morocco, from May 20 to June 20, 2014, where the Moroccan Crystallographic Association organized 3 traveling labs in Rabat, El Jadida, and Agadir.
- Speaker : "Rehabilitation and Non-Destructive Testing of Structures" at the 3rd International Ceramic Symposium, Ci-Ceram3, ENSA Safi, April 3-4, 2014.



- Speaker : The 5 Moroccan school crystallography, 24th – 26th October 2013

## **11- Invited Professor**

Invited Professor (1 month) at the University of Maine, Le Mans, France (2011)

## **12- Reviewer**

Reviewer for several International Journals (Evaluation of research work and writing reports):

- Alloys and Compounds, 2012.
- Journal of Spectroscopy, "Hindaoui Publishing Corporation," 2013-2015.
- Journal of Materials and Environmental Science.
- Journal of Molecular Structure.
- MATEC Web of Conferences.
- Journal of Building Engineering.
- Materials Today: Proceedings.

## V. Teaching activity

### 1- Pedagogical innovation

- Some master's courses are already partially conducted through distance learning via the ZOOM platform, allowing all students to ask questions in real-time while attending their classes. This experience was assessed with the Materials and Energy Engineering master's cohort, and the results were very promising.
- Pedagogical use of students' writings: Progression of programs and summary of overall evaluation by students, including questionnaires, strengths, challenges encountered, and recommendations for future cohorts (Bachelor's and Master's levels), since 2012.
- Project Member: AFRICAN CITIES LAB, in collaboration with UM6P in Benguerir and EPFL in Lausanne, Switzerland, for the creation of MOOCs on urban development in Africa, titled 'Photovoltaic Solar Energy and Its Applications for Urban Development : 240 minutes, 2023.

## 2- Lecture notes

N°	Lecture notes	Level	Years of accreditation
1	Solid State Chemistry and Computer Tools	Licence	2009 - 2012
2	Electrical Properties of Materials	Master	2011 to Present
3	Biomaterials	Master	2009 - 2012
4	Glass Materials	Master	2009 to Present
5	Mechanical Properties of Materials	Master	2009 to Present
6	Magnetic Properties of Materials	Master	2009 to Present
7	Optical and Luminescent Properties of Phosphates	Master	2009 - 2012
8	Electron Paramagnetic Resonance Spectroscopy	Master	2009 to Present
9	Descriptive Chemistry and Coordination Chemistry	Licence	2016 to Present
10	Radiocrystallography and Crystallochemistry	Licence	2016 to Present
11	Practical Work in Inorganic Chemistry	Licence	2000 to 2009
12	Practical Work in Crystallochemistry	Licence	2016 to Present
13	Practical Work in Coordination Chemistry	Licence	2016 to Present
14	Mössbauer and Raman Spectroscopies	Master	2007 to 2009
15	Inorganic Materials and Nanomaterials	Master	2007 to 2009
16	Thermal Analysis Techniques of Materials	Master	2010-2014
17	Determination of Thermal Conductivity of Construction Materials by Guarded Hot Plate Method.	Master	2016 to Present

## 3- Tutorials / Book

- Tutorial : Computer Tool for Crystallography, 2011.  
Pr. A. EL BOUARI - Pr. A. AATIQ
- Tutorial : Using Computer Tools for Determining Crystal Structures with the Rietveld Method, 2014.  
Pr. A. EL BOUARI - Pr. S. BENMOKHTAR
- Book : CRYSTAL STRUCTURE RESOLUTION FROM POWDERS (Target Audience: Ph.D. students from Morocco and Africa. Event : 2014 International Year of Crystallography supported by UNESCO and the United Nations (Workshops in Rabat, El Jadida, and Agadir).
  - [http://www.amcr.ma/attachments/openlabs/cours/Cours\\_Rietveld%20 BENMOKHTAR26-05-14.pdf](http://www.amcr.ma/attachments/openlabs/cours/Cours_Rietveld%20BENMOKHTAR26-05-14.pdf)

## 4- Coordinator of Several Modules

- Module : Crystallochemistry and Radiocrystallography,  
Bachelor's Degree, SMC Program (Semester 6), 2021 to present
- Module : Properties of Materials,  
Master's in Materials Engineering, 2011 to Present
- Module: Master's Thesis (PFE),  
Master's in Materials Engineering, 2011 to Present

- Module: Structural Monitoring Techniques in Construction, Master's in Materials Engineering, 2011-2016
- Module : « Materials Engineering and Technology », Master's MASTECH, 2013-2016.
- Module: Descriptive Chemistry and Coordination Chemistry, Bachelor's Degree, SMC Program (Semester 6), 2014 to Present

## **5- Involvement in Design**

- Participation in the design of the MASTECH Master's program, Faculty of Sciences Ben M'Sik, year 2014
- Participation in the design of the Master's in Materials and Energy Engineering, Faculty of Sciences Ben M'Sik, 2016.
- Participation in the design of the 4G Program, SMC at the national level : 2014
- Participant in the design of the SMC Program at the Faculty of Sciences Ben M'Sik, 3G and 2G : 2007-2010 and 2010-2014.

## VI. Experience in Partnership Development

Throughout my roles as Department Head, Laboratory Director, Master's Program Coordinator, leader of various research projects, and member of several scholarly associations, I have initiated numerous academic and socio-economic cooperation agreements, both at the national and international levels :

- I initiated several agreements with the industrial sector for the following reasonsChercher des stages pour les étudiants
  - Conducting visits to companies with students.
  - Scouting the field for program innovation and ensuring alignment between education and employment.
  - Seeking collaborative projects.etc.

Among the partner companies involved in these activities

- **CERPHOS, SAMIR, COSUMAR, OCP, SNEP, Maghreb Steel, RADACO, ONEE, ST-Microelectronics, LAFARGE, Lesieur, LSR, MAFER, LPEE, IRESEN, CNESTEN, MAsCIR, ESITH, CETEMCO, LSR, Stroc Industrie, LSTP, SONACID, Residence Dar Essaada,...**
- Agreement between the Scientific Institute - Rabat and the Faculty of Sciences Ben M'Sik, 2015
- International Agreement between the University of Maine and the Faculty of Sciences Ben M'Sik, 2011.
- Agreement between the Faculty of Sciences Ben M'Sik and the Faculty of Engineering at Universidad Autonoma Del Carmen, Mexico, 2016.
- Collaboration Agreement 'University – Industry' between Hassan II University of Mohammedia, University of Meknes, and the companies Inter Afrique Climatisation and IRESEN, 2013.
- Collaboration Agreement 'University – Industry' between Hassan II University of Mohammedia, CNESTEN, LSA Industrie, University of Meknes, PSA Ciemat Platform Spain, and IRESEN, 2012.
- Agreement between Casa Environnement and the Urban Commune of Casablanca, 2015Container de l'Environnement de Casablanca
- Agreement between Casa Environnement and the Secretary of State for Sustainable Development, 2015.
- Agreement between Casa Environnement and the Lydec Foundation, years 2015-2019

- Fincome Project: Guest speaker : K. ADIL from the University of Maine, France, 2011
- Projet Fincome : Guest speaker : Pr. M. ABATAL from the University Autonome du Carmen Mexique. 2015.

## VII. Professional Associations

- **President (Founding Member) of the Alumni Association of the Faculty of Sciences Ben M'Sik - Casablanca**
- **General Secretary (Founding Member) of the Morocco Sciences and Sustainable Development Association (MS2D)**  
The activities of the MS2D association are focused on sustainable development and include:
  - Conducting awareness campaigns, training sessions, and scientific research.
  - Facilitating think tanks on education and scientific research.
  - Publishing information and scientific or fieldwork.
  - Organizing scientific and cultural events.
- **Member of the Moroccan Society of Crystallography**  
I have led several conferences and workshops to promote the teaching of crystallography within various national universities :
  - Practical work at EMC Oujda, December 28, 2013, on "Data Collection and Reduction, and Determination of Symmetry Groups" for around a hundred doctoral students from Morocco and Africa.
  - Conducted three 3-day workshops as part of OpenLab Morocco from May 20 to June 20, 2014. The Moroccan Crystallographic Association organized these traveling labs in Rabat, El Jadida, and Agadir.
- **Member of the National Committee of REMAT (National Network of Physico-Chemistry of Materials)**
- **Member of the National Committee of REMCES (Moroccan Network on Solid State Chemistry )**
- **Founding Member of the Casablanca Associations Network for Environment and Sustainable Development (Casa Environment) 2013-2019**  
Main activities carried out:
  - 2 Environmental Caravans.
  - 2 Environmental Weeks.
  - 4 Casa Green Streets Competitions in Casablanca.
  - 4 Artistic Award Ceremonies for the competition.
  - 3 Car-Free Days in Casablanca and Mohammedia (The largest days in Africa).

- Management of the awareness and training center on the environment: Casablanca Environmental Container (CONTEC).
- Training in schools.
- Beautification of green spaces.
- Distribution of canvas bags.
- The world's largest ecological bag.
- Organization of regional meetings on the environment and sustainable development.
- Scientific meetings on the environment.

- **Member of the National Board of the Network "Renewable Energy University Network (REUNET)"**

The objective is to train a new generation of researchers, scientists, engineers, and technicians capable of implementing the Moroccan energy strategy. This strategy aims to ensure energy independence, reduce reliance on fossil fuels, secure energy supply for all, and create wealth and employment opportunities.

- March 21-22, 2019: Organization of the Spring University on the Energy Efficiency of Buildings, National School of Applied Sciences, Khouribga
- October 29-30, 2018: Workshop on Generic Techniques for the Manufacture of Electronic Devices in General and Devices for New and Renewable Energies, Faculty of Sciences BEN M'SIK, Casablanca
- May 8-10, 2018: Organization of the International Congress on Solar Energy Research, Technology, and Applications (ICSERTA'2018), Ouarzazate.
- May 25, 2017: Scientific Day on Wind Energy, Hassania School of Public Works – Casablanca
- April 24-27, 2017: Concentrated Solar Thermal (CSP) Training for Doctoral Students, Ouarzazate
- April 11-13, 2017: 2nd edition of the Franco-Moroccan Symposium on Renewable Energies and their Integration into Transport and Distribution Networks, Faculty of Sciences and Techniques, Fès
- March 1, 2017: Scientific Workshop on "Smart Grids & Renewable Energies," Faculty of Sciences Ben M'Sik, Casablanca
- January 14, 2017: Workshop on Research in Energy Efficiency of Buildings: Assessment and Scientific Perspectives, Ecole Normale Supérieure de l'Enseignement Technique – ENSET, Rabat.
- April 26, 2016: COP 22 - REUNET mobilizes for the climate. REUNET Technical Day: Challenges and Perspectives of COP 22, Ecole Mohammadia d'Ingénieurs, EMI-Rabat
- May 25-28, 2016 : Training Seminar on Concentrated Solar Thermal (CSP) for Moroccan Teacher-Researchers (1st session), COS ONE – Ouarzazate
- October 12-14, 2016 : Training Seminar on Energy Audit in Buildings for Teacher-Researchers, National School of Mines, Rabat
- October 5-8, 2015 : Additional Training on Grid-Connected Photovoltaic Systems for Moroccan Ph.D. students in the "Photovoltaic Solar Energy" field, Higher School of Technology, Salé (EST-Salé), Mohammed V University, Rabat.
- October 20, 2015: REUNET Workshop "Towards a 100% Renewable Energy System in Morocco": What are the Research and Development Needs? Presidency of Mohammed V University, Rabat

## VIII. Other Experiences and Skills

- Member of several recruitment committees for Assistant Professors (Faculty of Sciences Ben M'Sik, Faculty of Sciences Rabat, Faculty of Sciences El Jadida, Faculty of Sciences Ain Chock, National School of Casablanca)
- Member of several bid evaluation committees for tender submissions in various procurement processes at Hassan II University of Casablanca.
- Member of the National Coordination Commission for the preparation of the SMC 4G program, 2014.
- Member of the Jury (President, Rapporteur, Examiner) for several University Accreditation and Doctoral Theses
- Member of the scientific committee of several national and international conferences
- Organized several conferences and meetings with socio-economic operators for the benefit of doctoral students and Master's students at the Faculty of Sciences Ben M'Sik.