Curriculum Vita
of
Dr. Houssem Rafik El-Hana BOUCHEKARA

Full Professor
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1 SUMMARY OF EXPERIENCE RECORD

1.1 PERSONAL

Last Name: BOUCHEKARA

First Name: Houssem Rafik El-Hana

Birth Date: 22 /07/1981/ Constantine, Algeria

Nationality: Algerian

Marital Status: Married and have three kids

Phone: 00 966 53 86 18 478

Personal Address: University of Hafr Al Batin, Saudi Arabia.

Professional Address: University of Hafr Al Batin, Saudi Arabia.

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ORCID profile: https://orcid.org/0000-0001-7702-990X

Web of Science ResearcherID: A-9326-2015

Scopus Author Identifier: 24066258400

ResearchGate profile: https://www.researchgate.net/profile/Houssem_Bouchekara?ev=hdr_xprf

Google scholar profile: http://scholar.google.com/citations?user=ttZ8lbEAAAAJ&hl=en

Mendeley profile: https://www.mendeley.com/profiles/houssem-rafik-el-hana-bouchekara/

Publons profile: https://publons.com/researcher/1321052/houssem-bouchekara/peer-review/

Mathwork profile: https://www.mathworks.com/matlabcentral/profile/authors/3241995-houssem

1.2 EDUCATION

- **January 2015:** HDR (accreditation to supervise research) degree in Electrical Engineering, University of Constantine 1, Algeria. Title 'Application of artificial intelligence to power systems'.
- **September 2008:** Ph.D. degree in Electrical Engineering, Grenoble Electrical Engineering Laboratory, Grenoble Institute of Technology (Grenoble INP), France. Thesis title '*Research on Magnetic Refrigeration Systems, Numerical Modeling, Design and Optimization*'.
- **September 2005**: M.Sc. in Electronic Systems and Electrical Engineering, option Electrical Engineering, Polytechnic School of Nantes University, France. Thesis title '*Identification of Electromagnetic Properties of Soft Magnetic Composites*', Ranked First.
- **July 2004:** B.Sc. in Electrical Engineering, option Electrical Machines, University of Mentouri Constantine, Algeria. Thesis title '*Numerical Modeling of the Synchronous Machine for its Dimensioning*', Ranked First.

1.3 EMPLOYMENT

1.3.1 ACADEMIC RANKS

- **April 2020 to present**: Professor, Electrical Engineering Department, University of Hafr Al-Batin, Hafr Al-Batin, Saudi Arabia.
- **April 2019 to present**: Head of Department, Electrical Engineering Department, University of Hafr Al-Batin, Hafr Al-Batin, Saudi Arabia.
- **October 2018 to present**: Associate Professor, Electrical Engineering Department, University of Hafr Al-Batin, Hafr Al-Batin, Saudi Arabia.
- **January 2015 to September 2018**: Associate Professor, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria.
- **September 2012 to January 2015**: Assistant Professor, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria.
- **September 2009 to September 2012**: Assistant Professor, Electrical Engineering Department, Umm Al-Qura University (UQU), Makkah, Saudi Arabia.

1.3.2 RESEARCH RANKS

- **September 2012 to April 2015:** Research Fellow, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria.
- **April 2015 to November 2015:** Research Associate, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria.
- **November 2015 to present:** Senior Research Associate, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria.

1.3.3 SERVICE ACTIVITIES

- Coordinator of the Electrical Engineering Department, University of Hafr Al Batin (UHB), Hafr Al Batin, Saudi Arabia, April 2019 to present.
- Member of the scientific council, University of Hafr Al Batin (UHB), Hafr Al Batin, Saudi Arabia, june 2019 to present.
- Designated as expert in power systems by the National Pedagogical Committee of Science and Technology in order to update power systems master's programs, November 2016 to present.
- Coordinator of Master of Power systems, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria, June 2015 to present.
- Coordinator of Security of Operation of Electrical Systems Research Group, Laboratory of Electrical Engineering of Constantine, LGEC, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria, November 2015 to present.
- Associate member of the Scientific Committee of the Inductics Research Net / Direction Générale de la Recherche Scientifique et du Développement Technologique DGRSDT-Algeria.

- Member of Design and Optimization of Electromagnetic Systems Research Group, Constantine Electrical Engineering Laboratory, LEC, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria, September 2012 to present.
- Member of the Doctoral Studies Committee, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria, January 2015 to present.
- Member of the Scientific Council of the department, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria, December 2015 to present.
- Member of the Pedagogical Council of the department, Electrical Engineering Department, University of Constantine 1 (UC1), Constantine, Algeria, June 2015 to present.
- Member, Power Courses ABET Committee, Electrical Engineering Department, UQU, 2009-2012.
- Coordinator of the master's Program Committee, Electrical Engineering Department, UQU, 2010-2012
- Member, Design Project Committee, Electrical Engineering Department, UQU, 2010-2012
- Member, Committees for TA Position Written Exam, Electrical Engineering Department, UQU, 2010
- Member Editor of the Electrical Engineering Magazine, Electrical Engineering Department, UQU, 2010-2012
- Member, Training committee, Electrical Engineering Department, UQU, 2010-2012
- Chair, website committee, Electrical Engineering Department, UQU, 2010-2012.

1.3.4 INDUSTRY

- **April 2009 to July 2009:** Doctor Engineer, Brandt, Algeria.

1.4 AWARDS

- **2002:** First in my year (B.Sc.).
- **2003:** First in my year (B.Sc.).
- **2004:** First in my year (B.Sc.).
- **2005:** First in my year (M.Sc.).
- **2010:** Best football team supervisor at the EE department of Umm El Qura University.
- **2011:** Best professor, close to the EE department students.

2 TEACHING

2.1 TEACHING STATEMENT

2.1.1 MY TEACHING PORTFOLIO

My main motivation for applying to a position in a university and not in industry is that I love teaching and interacting with students. The knowledge we accumulate as researchers is valuable only if it is shared.

A good teacher has to inspire students to make them love the course and try to motivate them and make them trust themselves. Because a student that has confidence in himself will perform much better than a student that has no confidence in himself. Therefore, I always try to let the student know that he is the most important part of the teaching-learning process and he has the right to make mistakes. Whether or not they realize it, students have the freedom to explore and to think about problems in different ways even if they are wrong and it is the teacher's job to guide them through the correct way or more exactly one of the correct ways.

Another important point in the teaching-learning process is to make students feel comfortable with the teacher so they can ask any question they want. Because students, in general, are shy and they tend to avoid asking questions. As a teacher, from the first lecture, I try to make all my students feel very comfortable even the shyest ones that sit in the back. Therefore, after few lectures students start to ask questions, to interact with me and to play an active role in their learning process. Moreover, one practice that I love to do with my students is to ask a question, if I receive different answers, I write them on the board and I try to discuss all the answers with my students and I try to involve all of them to choose an answer or give another one. Discussions after that can take several minutes until the right answer is found and more importantly why it is the write answer.

One think that I have learnt from experience, is the mutual respect between teacher and subtends. A respected student will respect, believe and trust his teacher. This is why I try to build a respectful relationship in class between me and my students.

From a technical point of view, I try to simplify concepts and I do not hesitate to employ real life metaphors or well-known concepts to help the student understand difficult subjects. One of the most difficult courses in engineering is Electromagnetics. I had to teach this course early in my career. Actually, it was the first course I taught, and I have learnt a lot from this experience, and it has become one of my most preferred courses. This course has taught me how to invent simple and efficient strategies of teaching. Therefore, as a teacher, I constantly work on improving my teaching methods. I strive to identify the diverse needs of my students, and accordingly, I develop new strategies in response to students' requirements and expectations.

As a teacher, I try also to be innovative and to have my own teaching style because I don't only want to be a good teacher, but I also strongly want to be a distinguished teacher. Therefore, I sometimes improvise and invent some methods of teaching to convince the students that the teacher in front of them is not the vocal version of the textbook they have.

Finally, I believe a teacher's enthusiasm for a subject is contagious, and I am glad when it passes on in class or in one-on-one conversations.

2.1.2 MY TEACHING RECORD

Like many, I tend to prefer advanced courses in my areas of research: Power System, Electromagnetics and applied mathematics. However, I am also very happy to teach other courses related to electrical engineering.

A summary of my teaching experience follows:

2.1.2.1 Course taught year by year

2009/2010
- Electromagnetics I
- Fundamentals of Electrical Engineering
- Transmission and Distribution of Electric Power

2010/2011
- Circuit Analysis II
- Electromagnetics I
- Engineering Computational Methods
- Introduction to Electrical Power Engineering
- Numerical Analysis

2011/2012
- Electrical Power Systems
- Engineering Computational Methods
- Engineering Computational Methods (Lab)

2012/2013
- Applied Mathematics for Electrical Engineering
- Construction of Electrical Machines (Lab)
- Electrical Power Systems I
- Electrical Power Systems II
- Materials for Electrical Engineering

2013/2014
- Applied Electromagnetics
- Applied Mathematics for Electrical Engineering
- Distribution systems
- Distribution systems (Lab)
- Electrical Power Systems III (Lab)
- Numerical Modelling of Electromagnetic Phenomena (Lab)

2014/2015
- Applied Mathematics for Electrical Engineering
- Distribution systems
- Distribution systems (Lab)
- Electrical Power Systems III (Lab)
- Technical English
- Tools and Simulation Software
- Tools and Simulation Software (Lab)

2015/2016
- Applied Artificial Intelligence for Electrical Engineering
- Numerical Analysis and Optimization
- Theory of Electromagnetic Field

2016/2017
- Numerical Analysis and Optimization
- Power systems Analysis
- Optimal Operation of Power Systems (Lab)
- Power Systems Planning
- Power systems Analysis and Optimization

2.1.2.2 Course taught classified following the course level

Graduate (16 courses)

- Applied Electromagnetics
- Applied Mathematics for Electrical Engineering
- Construction of Electrical Machines (Lab)
- Electrical Power Systems I
- Electrical Power Systems II
- Electrical Power Systems III (Lab)
- Materials for Electrical Engineering
- Numerical Analysis and Optimization
- Numerical Modelling of Electromagnetic Phenomena (Lab)
- Technical English
- Theory of Electromagnetic Field
- Tools and Simulation Software
- Tools and Simulation Software (Lab)
- Optimal Operation of Power Systems (Lab)
- Power Systems Planning
- Power systems Analysis and Optimization

Undergraduate (13 courses)

- Applied Artificial Intelligence for Electrical Engineering
- Circuit Analysis II
- Distribution systems
- Distribution systems (Lab)
- Electrical Power Systems
- Electromagnetics I
- Engineering Computational Methods
- Engineering Computational Methods (Lab)
- Fundamentals of Electrical Engineering
- Introduction to Electrical Power Engineering
- Numerical Analysis
- Transmission and Distribution of Electric Power
- Power systems Analysis

2.1.2.3 Course taught classified following the course field

Applied Mathematics
Applied Artificial Intelligence for Electrical Engineering
Applied Mathematics for Electrical Engineering
Engineering Computational Methods
Engineering Computational Methods (Lab)
Numerical Analysis
Numerical Analysis and Optimization
Electromagnetics
Applied Electromagnetics
Electromagnetics I
Numerical Modelling of Electromagnetic Phenomena (Lab)
Theory of Electromagnetic Field
Introductory
Circuit Analysis II
Fundamentals of Electrical Engineering
Power Systems
Distribution systems
Distribution systems (Lab)
Electrical Power Systems
Electrical Power Systems I
Electrical Power Systems II
Electrical Power Systems III (Lab)
Introduction to Electrical Power Engineering
Transmission and Distribution of Electric Power
Power systems Analysis
Optimal Operation of Power Systems (Lab)
Power Systems Planning
Power systems Analysis and Optimization
unclassified
Construction of Electrical Machines (Lab)
Materials for Electrical Engineering
Technical English
Tools and Simulation Software
Tools and Simulation Software (Lab)

2.2 DEVELOPMENT OF NEW PROGRAMS AND COURSES

- **2009/2010:** Co-developed a new undergraduate course in the EE department of Umm Al-Qura University, titled 'Engineering Computational Methods'. The course focused on computational methods applied using MATHCAD and Matlab.
- **2009/2010:** Developed many master courses in the EE department of Umm Al-Qura University, titled: Electrical power system control & dynamics, Advanced Power System Analysis, Distribution System Engineering, Renewable Energy Systems, Special Electrical Machines, Planning of Electric Power Systems, Electromagnetic Compatibility and Power Quality.
- **2013/2014:** Developed a course online for the e-learning program in the EE department of university of Constantine 1, Algeria, titled 'Applied Mathematics for Electrical Engineering'.
- **2015/2016:** Developed a new master program in the EE department of university of Constantine 1, Algeria, titled 'Power Systems'.

3 SUPERVISION

3.1 CHAIRED DOCTORAL DEGREES

	Student Name	Dissertation Title	Date
D1	A.E Chaib	Optimal power flow using metaheuristic techniques	2013-Present
D2	H. Kherrab (Co-supervision)	Optimization od induction devices using metaheurstics	2013-Present
D3	Y. Latreche (Co-supervision)	Study of the integration of distributed generation in distribution networks: application to solar energy	2014-present
D4	A. Ameloune	Development of a new methodology of wiring diagnosis	2015-present
D5	Z. Lacheheb	Identification of the topology ofwiring networks by analyzing reflectometry signals	2015-present

3.2 CHAIRED MASTER DEGREES

	Students Name	Thesis Title	Date
M1	S. Bahri	Optimal power flow using particle swarm optimization method	2013
M1	S.E Zeggar	Economic power dispatch using particle swarm optimization and genetic algorithms	2013
M3	H. Kherrab	Smart algorithms, application in electrical engineering	2013
M4	M. A Amira C. Zater	Study of Supply Process Within the company	2013
M5	Y. Latreche	Diagnosis of power transmission lines based on artificial neural networks	2014
M6	B. Goutal	Voltage Stability improvement in distribution networks using distributed generation	2014
M7	A. Bounouira	Study of transient stability of power systems	2014
M8	B. Lhiouel	Design and optimization of a system of induction heating; application to an induction cooktop	2014
M9	A. Ameloune	Detection, classification and localization of faults in power transmission lines using artificial intelligence	2014
M10	D. Belaribi	Improvement of the quality of service and reduction of losses in distribution networks by the integration of distributed generation	2015
M11	F. Debbabi	Practical realization of an induction Heater	2016

M12	A.Dehane R. Hamouda	Development of a remote-controlled car based on Arduino	2017
M13	C.E. Sabaa	Short term electric load forecting using artificial neural netwroks	2017
M14	B. Amroune S. Samir	Transmission Expansion Planing using particle swarm optimization and simulated annealing	2017
M15	S. Boulares F. Menzri	Study of the power flow in power systems including FACTS devices	2017

3.3 GRADUATION PROJECTS

- **2009-2010-Term1:** Supervised a senior project group at the EE department, UQU. Project title: Smart Light Breaking System. Average grade of the project (95/100).
- **2009-2010-Term2:** Supervised a senior project group at the EE department, UQU. Project title: Study on the Potential Applications of Photovoltaic Solar energy. This project has been chosen one of the two best projects for this term. Average grade of the project (98/100).
- **2010-2011-Term1:** Supervised a senior project group at the EE department, UQU. Project title: Design of Solar Thermal Systems. This project has been chosen one of the two best projects for this term. Average grade of the project (98/100).
- **2011-2012-Term1:** Supervised a senior project group at the EE department, UQU. Project title: Short Term Electrical Load Forecasting. Average grade of the project (94/100).

3.4 SUMMER STUDENTS' SUPERVISION

2010-2011- supervised 20 summer training students.

4 RESEARCH

4.1 RESEARCH AREAS

- **Area (1):** Magnetic refrigeration
- **Area (2):** Power and energy systems
- **Area (3):** Optimization, Artificial intelligence, Computational intelligence and Metaheuristics
- **Area (4):** Computational electromagnetics and the Design optimization of electromagnetic devices
- **Area (5):** Fault diagnosis of wiring networks
- **Area (6):** Education

4.2 RESEARCH STATEMENT

My research interests include Magnetic refrigeration, Power and energy systems, Optimization, Artificial intelligence, Computational intelligence, Metaheuristics, Computational electromagnetics and the Design optimization of electromagnetic devices, Fault diagnosis of wiring networks and Education.

I have completed my five-year Bachelor of Electrical Engineering at Faculty of Engineering, University Mentouri of Constantine in July 2004 (ranked First). Through my undergraduate study, I have gained in-depth knowledge of many engineering subjects which include electrical machines, electrical power systems and electromagnetics. In the final year of my undergraduate study, I have presented a graduation project related to the design of synchronous machines. Also, during that year, I have developed a software for the construction of electrical machines application the DC machine.

During my master's degree I have worked on soft magnetic composite materials. Magnetic materials are exploited in many technical applications. In electrical engineering they are used in transformers or electrical machines. The objective of my research master was to model soft magnetic composite materials using homogenization techniques.

One of my main areas of research is magnetic refrigeration. The future of magnetic refrigeration looks bright. Much research is ongoing in the field of magnetocaloric materials and magnetic refrigeration-based systems to find a suitable way to make an efficient system. Even though significant advances are achieved in giant magnetocaloric materials around room temperature and the feasibility of magnetic cooling technology has been demonstrated through several prototypes more work on both the fundamental and practical plane is needed to master this technology. I have started to work on this field During my PhD degree. My research focuses on the development of magnetic refrigeration-based systems for industrial and domestic applications.

After I had completed my PhD, I have explored new research area like optimal operation of power systems. In order to increase the efficiency of power systems, planning, control and operation require a suitable use of existing resources. Huge savings can be made if optimal solutions are used in power systems. Therefore, the development and exploration of efficient and adequate optimization and control methods is mandatory. Furthermore, power systems are complex, uncertain and changing environments that make the use of traditional optimization methodologies impracticable in most actual conditions. The application of metaheuristics to deal with several problems of future power systems like optimal power flow and economic dispatch is my preferred field of research.

Another new research area that I have added to my research skills is the improvement of metaheuristics and more recently the development of new algorithms. So I have improved many algorithms like the "Electromagnetics Like Mechanism", "Black Hole Based Optimization" and the "Colliding Bodies Optimization" Algorithms. Regarding the development of new metaheuristics, I have developed recently a new metaheuristic called "Most Valuable Player Algorithm (MVPA) ' which is based on sport. The method has been tested and evaluated on many benchmarks and problems and it has given better results than other well-known algorithms like: PSO, GA, TLBO and DE. I have written a paper about the MVPA that is Bouchekara, H.R.E.H. Most Valuable Player Algorithm: A novel Optimization Algorithm Inspired by Sport. Oper Res Int J (2017). doi:10.1007/s12351-017-0320-y.

In many advanced systems, such as aviation aircrafts, maintaining the massive and aging wiring networks represents a real challenge. Wires that are subjected to electrical, chemical, and mechanical stresses that lead to cracks, abrasions, breaks, loose of connections, and other damages. These damages might cause a several effects that range from slightly reducing the performance efficiency of the affected systems to causing total failure with catastrophic consequences. My research in this field focuses on the Identification, localization, and characterization of different types of defects in multi wiring networks.

In all areas of engineering the efficient and effective design of products is crucial. Therefore, designers are faced with the challenge of optimizing ever more complex components, devices, and systems this is more specifically so in the field of electromagnetic devices (EMD) where the optimization is of paramount importance. In the area of EMD, building physical prototypes is a time consuming and prohibitively high-cost approach and can represent a large percentage of the total costs involved in bringing a product to market. Reducing this time and cost burden has been, and still is, a key issue. Therefore, designing engineers have spent considerable time and effort on the creation of algebraic models to simulate the physical EMD and eventually to predict its performance. Nowadays, real laboratories are replaced by computer environments for this purpose. In these virtual laboratories the physical EMD is replaced by a virtual prototype which can be tested with the same level of accuracy as the physical EMD but with significant reductions in time and costs. Moreover, with the development of more accurate and complex models in addition to the development of cheap and powerful computing systems, we are able now to simulate the physics involved in the operation of an EMD at a high level which is as good as, or sometimes better than, what can be achieved from a physical prototype in a real laboratory. The design and optimization of electromagnetic devices constitutes one of my preferred areas of research.

In future work, I wish to continue studying different challenging problems related to current areas of research. I want to extend my works in the field of optimization algorithms and more particularly in metaheuristics. I want also to realize my research work on protection of power systems to results in some publications in international journals. Finally, I want to explore a new field that attracts me that is Smart Grid.

4.3 PROJECTS

4.3.1 SPONSORED PROJECTS

P1 M. Anwari, **H. Bouchekara (Coinvestigator)**, O. Alamri, ''Evaluation and Optimization of Hybrid Photovoltaic/Diesel Energy System'', funded by Institute of Scientific Research and Revival of Islamic Heritage, for a period of one year, 2012.

P2 M.E.H. Latreche, R. Mehasni, D. Belahrache, M. Bidi, **H. Bouchekara (Coinvestigator)**, S. Amrane, "Induction Heating In The Steel Industry, Optimization For Surface Treatment Process", funded by the Algerian Ministry Of Higher Education And Scientific Research, for a period of 3 years, 2014/2016.

P3 R. Mehasni, M.E.H. Latreche, D. Belahrache, M. Bidi, **H. Bouchekara (Coinvestigator)**, S. Amrane, "Development and Application Of Magnetic Separation Techniques In Particulate Media", funded by the Algerian Ministry Of Higher Education And Scientific Research, for a period of 3 years, 2014/2016.

P4 R. Mehasni, M.E.H. Latreche, D. Belahreche, **H. Bouchekara (Coinvestigator),** A. Belounis, M. Ouili, 'Realization of an open gradient field magnetic separator', funded by the Algerian Ministry Of Higher Education And Scientific Research, Direction Générale de la Recherche Scientifique et du Développement Technologique (DGRSDT), for a period of 2 years, 2015/2016.

P5 M. Anwari, **H. Bouchekara (Coinvestigator)**, Optimization of PV/wind/diesel hybrid microgrid system using multi-objective self-adaptive differential evolution algorithm, for a period of one year, 2016.

P6 M. Anwari, **H. Bouchekara (Coinvestigator)**, Optimization of Tilt Angle for Solar Panel Using Vortex Search Algorithm: Saudi Arabia Case Study, for a period of one year, 2017.

P7 M. Anwari, **H. Bouchekara (Coinvestigator)**, Optimized Power Management in Microgrid Using An Enhanced Most Valuable Player Algorithm, for a period of one year, 2018.

P8 M. Anwari, **H. Bouchekara (Coinvestigator)**, Optimal Energy Management and Scheduling of Distributed Energy Resources, for a period of one year, 2020.

P9 M. Anwari, **H. Bouchekara (Coinvestigator)**, Wind Farm Layout Optimization Considering Obstacles Using A Binary Most Valuable Player Algorithm, for a period of one year, 2020.

P10 **Bouchekara H., (Principal Investigator)**, Shahriar MS, Javaid MS, Shaaban YA, Nanogrid – Miniature Energy System for Distributed Occasional Loads for Hafr Al-Batin Community, for a period of one year, 2020.

P11 Alanezi MA, **Bouchekara H. (Coinvestigator)**, Javaid MS, Internet of Things – A Step Towards Transforming Hafr Al Batin City into a Smart City , for a period of one year, 2020.

P12 Alanezi MA, **Bouchekara H. (Coinvestigator)**, Javaid MS, Smart Airborne Shepherd for Livestock Herding and Monitoring using Drone, for a period of two years, 2020.

P13 M. Anwari, **H. Bouchekara (Coinvestigator)**, Fault Diagnosis for Smart Microgrid Components and Systems using Artificial Intelligence, for a period of one year, 2021.

P14 M. Anwari, **H. Bouchekara (Coinvestigator)**, Probability Assessment of Dual Mode Operations of Wind Turbine using Hierarchical Adaptive Learning Linear and Nonlinear Sub Models, for a period of one year, 2021.

P15 M. Anwari, **H. Bouchekara (Coinvestigator)**, Partial shading mitigation of PV systems via different meta-heuristic techniques, for a period of one year, 2021.

P16 M. Anwari, **H. Bouchekara (Coinvestigator)**, Identification of Different Faults in Microgrid Systems Components using Artificial Intelligence, for a period of one year, 2021.

P17 M. Anwari, **H. Bouchekara (Coinvestigator)**, The development of innovative computational intelligence techniques in forecasting, design, planning, and optimal operation of energy systems, for a period of two years, 2021.

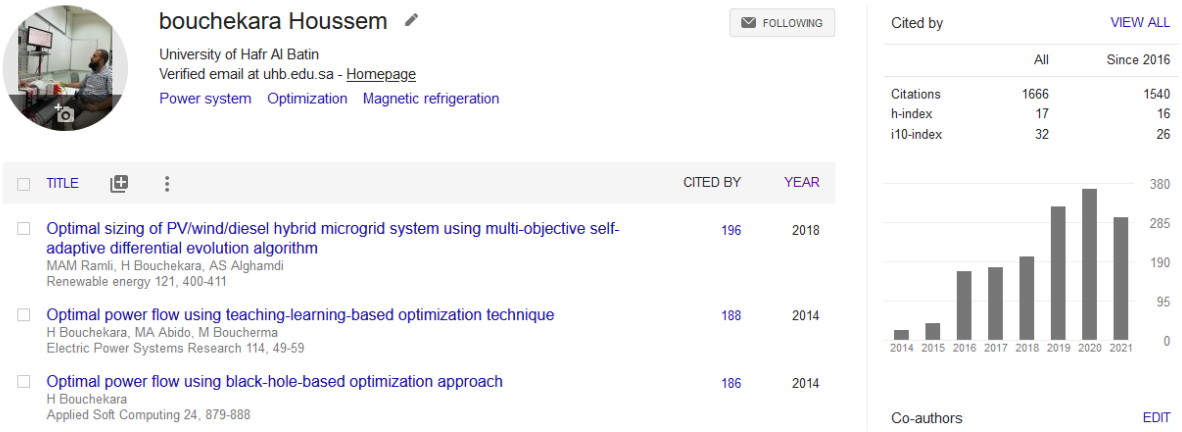
4.4 PUBLICATIONS

4.4.1 SUMMARY

Publication Type	Author Index	Total	
Journals	As 1st Author	39	**71**
	As 2nd Author	19	
	As 3rd Author and above	13	
Conferences	As 1st Author	15	**25**
	As 2nd Author	3	
	As 3rd Author and above	7	
Book Chapters	As 1st Author	2	**3**
	As 2nd Author	0	
	As 3rd Author and above	1	
Books	As 1st Author	1	**1**
Total		**100**	**100**

4.4.2 CITATIONS

Google Scholar citations Profile



bouchekara Houssem

FOLLOWING

University of Hafr Al Batin
Verified email at uhb.edu.sa - Homepage
Power system Optimization Magnetic refrigeration

TITLE	CITED BY	YEAR
Optimal sizing of PV/wind/diesel hybrid microgrid system using multi-objective self-adaptive differential evolution algorithm MAM Ramli, H Bouchekara, AS Alghamdi Renewable energy 121, 400-411	196	2018
Optimal power flow using teaching-learning-based optimization technique H Bouchekara, MA Abido, M Boucherma Electric Power Systems Research 114, 49-59	188	2014
Optimal power flow using black-hole-based optimization approach H Bouchekara Applied Soft Computing 24, 879-888	186	2014

Cited by VIEW ALL

	All	Since 2016
Citations	1666	1540
h-index	17	16
i10-index	32	26

Co-authors EDIT

4.4.3 REFEREED JOURNALS

J1 Bouchekara, H., Kedous-Lebouc, a., Dupuis, C., & Allab, F. (2008). Prediction and optimisation of geometrical properties of the refrigerant bed in an AMRR cycle. *International Journal of Refrigeration*, *31*(7), 1224–1230. doi:10.1016/j.ijrefrig.2008.02.007

J2 Bouchekara, H., Yonnet, J. P., & Kedous-Lebouc, A. (2009). Torque compensation system based on permanent magnet. *Sensor Letters*, *7*(3), 492–496. doi:http://dx.doi.org/10.1166/sl.2009.1095

J3 Bouchekara, H. R. E., & Simsim, M. T. (2010). Screening applied to the numerical modeling of electromagnetic devices. *Ain Shams Engineering Journal*, *1*(2), 131–137. doi:10.1016/j.asej.2011.04.001

J4 Bouchekara, H., Dahman, G., & Nahas, M. (2011). Smart Electromagnetic Simulations: Guidelines for Design of Experiments Technique. *Progress In Electromagnetics B*, *31*(May), 357–379. doi:10.2528/PIERB11052104

J5 Bouchekara, H. R. E. H., Allag, H., & Boucherma, M. (2011). Interactive Software for the Support of Learning and Teaching in Electromagnetics. *International Journal of Electromagnetics and Applications*, *1*(1), 1–6. doi:10. 5923/j.ijea.20110101.01

J6 Bouchekara, H. R. E. H., Boucherma, M., & Allag, H. (2011). Interactive Implementation of Experimental Design Method -Application to Engineering Optimal Design. *American Journal of Computational and Applied Mathematics*, *1*(1), 1–8. doi:10.5923/j.ajcam.20110101.01

J7 Bouchekara, H. R. E. H., Kedous-Lebouc, A., & Yonnet, J. P. (2011). ELECTROMAGNETIC DESIGN OF A MAGNETIC FIELD SOURCE FOR A MAGNETOCALORIC REFRIGERATOR. *Progress In Electromagnetics Research M*. doi:10.2528/PIERM11062708

J8 Bouchekara, H. R. E. H., & Simsim, M. T. (2011). Quantification of Influence of Factors on Transmission Lines Using a Statistical Method. *Journal of Electrical Systems*, *7*(1), 89–100.

J9 Bouchekara, H., & Simsim, M. (2011a). Design and optimization of a permanent magnet rotating machine for power cooling generation. *Progress In Electromagnetics Research M*, *20*(June), 57–71. doi:10.2528/PIERM11062706

J10 Bouchekara, H., & Simsim, M. (2011b). Design of Permanent Magnet Machine for Power Cooling Generation. *International Review on Modelling & Simulations*, *4*(4), 1583–1590.

J11 Bouchekara, H. R. E. H., Kedous-Lebouc, a., & Yonnet, J. P. (2012). Design of a new magnetic refrigeration field source running with rotating bar-shaped magnets. *International Journal of Refrigeration*, *35*(1), 115–121. doi:10.1016/j.ijrefrig.2011.08.006

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4.4.4 CONFERENCES

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C6 F.Allab, H. Bouchekara, C. Dupuis, A. Lebouc, J.P. Yonnet 'Approches Eléments Finis et Analytique pour le Calcul Electromagnétique d'u' Système de Réfrigération Magnétique à Aimants Permanents ", Conférence sur les Matériaux du Génie Electrique, May 2008, Toulouse, France.

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C23 H. Boudjefdjouf, H.R.E.H. Bouchekara, R. Mehaci, M.K.Smail, A. Orlandi, F. de Paulis'Wire Fault Diagnosis Using Time-Domain Reflectometry and Backtracking Search Optimization Algorithm', The 31st International Review of Progress in Applied Computational Electromagnetics (ACES 2015) March 22-26, 2015, Virginia, USA.

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C27 Latreche Y., Bouchekara H.R.E.H., Javaid M.S., Shahriar M.S., Sha'aban Y.A., Kerrour F. (2021) Optimal Siting and Sizing of DG Units Using a Decomposition Based Multiobjective Evolutionary Algorithm. In: Hatti M. (eds) Artificial Intelligence and Renewables Towards an Energy Transition. ICAIRES 2020. Lecture Notes in Networks and Systems, vol 174. Springer, Cham. https://doi.org/10.1007/978-3-030-63846-7_49

C28 M. S. Javaid, U. B. Irshad, M. A. Abido, M. H. Javaid and H. R. E. H. Bouchekara, "Deep Neural Network Driven Electric Spring for Voltage Regulation," 2020 International Conference on Smart Grids and Energy Systems (SGES), 2020, pp. 527-532, doi: 10.1109/SGES51519.2020.00099.

4.4.5 BOOKS

French title: Systèmes De Réfrigération Magnétique

English title: Magnetic Refrigeration Systems

Abstract: The work in this book is a contribution to the study and modeling of thermal and electromagnetic behavior of magnetic refrigeration systems. It shows clearly that the design and optimization of such systems must use specific numerical simulation tools due to the numerous difficulties related to the thermal behavior, the magnetic behavior, the mechanical behavior and especially to the user's needs. Both of thermal and electromagnetic modeling have been carried out in this work independently. This book lays the groundwork for magnetic refrigeration to study magnetic refrigeration systems. It will help further research to investigate new systems or to exploit described systems.

Paperback: 192 pages

Publisher: Editions universitaires europeennes (August 29, 2010)

Language: French

ISBN-13:978-6131529368

4.4.6 BOOK CHAPTERS

	Authors	Chapters
[BC1]	**H. Bouchekara,** M. Nahas	**Book title: Electromagnetism** **Chapter title: Magnetic Refrigeration Technology at Room Temperature** year 2012 (published) ISBN 979-953-307-400-8
[BC2]	**H. Bouchekara,** M. Simsim M. Anwari	**Book title: Induction Motor** **Chapter title: Optimization of Induction Motors Using Design of Experiments and Particle Swarm Optimization** year 2012 (published) ISBN 979-953-307-716-0
[BC3]	H. Boudjefdjou, F. De Paulis, **H. Bouchekara,** A. Orlandi, M.K. Smail,	**Book title: Nature Inspired Computing and Optimization: Theory and Applications** **Chapter title: Diagnosis of wiring networks using colliding bodies optimization method and time domain Reflectometry** Volume 10 of the series Modeling and Optimization in Science and Technologies pp 329-348. 10.1007/978-3-319-50920-4_13 **Print ISBN 978-3-319-50919-8**

4.5 REVIEWER

Reviewed several articles for the following journals:

1. Advances in Electrical and Electronic Engineering
2. AIMS Energy
3. Alexandria Engineering Journal
4. Applied Computational Electromagnetics Society (ACES)
5. Applied Energy
6. Applied Mathematical Modelling
7. Applied Soft Computing Journal (ASOC)
8. Applied Thermal Engineering (ATE)
9. Artificial Intelligence Review
10. Clean Technologies and Environmental Policy
11. Complexity
12. Computational Intelligence and Neuroscience
13. Computers and Electrical Engineering
14. Electric Power Components and Systems
15. Electrica
16. Electrical Energy
17. Electronics and Telecommunications Research Institute Journal
18. ELEKTRIKA - UTM Journal of Electrical Engineering (EJEE)
19. Energies

20. Energy
21. Energy Conversion and Management
22. Energy Policy
23. Energy Reports
24. Energy Sources, Part B: Economics, Planning, and Policy
25. Energy Systems
26. Engineering Optimization
27. Engineering Review
28. Engineering Science and Technology, an International Journal
29. Engineering with Computers
30. Environmental Science and Pollution Research
31. IEEE Access
32. IEEE Computational Intelligence Magazine
33. IEEE Systems Journal
34. IEEE Transactions on Electromagnetic Compatibility
35. IEEE Transactions on Industrial Electronics
36. IEEE Transactions on Magnetics
37. IEEE Transactions on Smart Grid
38. IET Electronics Letters
39. IET Energy Systems Integration
40. IET Generation, Transmission & Distribution
41. IET Intelligent Transport Systems
42. IET Power Electronics
43. IET Science, Measurement & Technology
44. IETE Journal of Research
45. Indian Journal of Science and Technology
46. International Journal of Bio-Inspired Computation
47. International Journal of Electrical Power and Energy Systems
48. International Journal of Energy Research
49. International Journal of Information Technology & Decision Making
50. International Journal of Mathematical, Engineering and Management Sciences
51. International Journal of Renewable Energy Development
52. International Journal of Systems Science
53. International Journal on Intelligent Automation and Soft Computing
54. International Transactions on Electrical Energy Systems
55. Inverse Problems in Science & Engineering
56. Iranian Journal of Science and Technology, Transactions of Electrical Engineering
57. Journal of Computational Design and Engineering
58. Journal of Electrical Engineering
59. Journal of Electrical Systems
60. Journal of Energy Storage
61. Journal of Intelligent Manufacturing
62. Journal of Modern Power Systems and Clean Energy
63. Journal of the Franklin Institute
64. Journal of Zhejiang University Science C (Computers & Electronics)

65. Knowledge-Based Systems
66. Measurement
67. Neural Computing and Applications
68. Progress in Electromagnetics Research (PIER)
69. Scientific Journal Facta Universitatis
70. Scientific Reports
71. SN Applied Sciences
72. Sustainable Cities and Society
73. Sustainable Computing: Informatics and Systems
74. Sustainable Energy Technologies and Assessments
75. Swarm and Evolutionary Computation
76. Technologies
77. Technology in Society
78. TELKOMNIKA (Telecommunication Computing Electronics and Control)
79. IEEE Open Access Journal of Power and Energy
80. Mathematics and Computers in Simulation

Reviewed a book for Taif University, Saudi Arabia, entitled 'A student's course book in electromagnetic fields'.

5 OTHER SCHOLARLY ACTIVITIES

5.1 CONFERENCE COMMITTEES

- International Scientific Committee of the International Conference on Recent Advances in Electrical Systems (ICRAES'16) that will be held on Nov. 1- Nov. 03, 2016 in Istanbul, Turkey.
- International Scientific Committee of the 4th Symposium on Inductics CI2015, June 10-11, 2015 in Jijel, Algeria.

5.2 SEMINARS

December 2013: 'Multiobjective optimization', Invited Speaker, OPTIM 2013, University of Constantine 1, Algeria.

December 2013: 'Application of Optimization Methods in Electrical Engineering', Invited Speaker, OPTIM 2013, University of Constantine 1, Algeria.

6 MISCELLANEOUS

6.1 TRAININGS

April 2013-June 2013: I have taken a training on the e-learning, titled ''Conception, Administration and Management of a Course online'.

6.2 LANGUAGES

- **Arabic:** first mother language.

- **French:** read, write and speak.
- **English:** read, write and speak.

7 REFERENCES

- **Prof. Mohammad Abido,** Distinguished University Professor, Electrical Engineering Dept., King Fahd Univ. of Petroleum & Minerals. E-mail: mabido@kfupm.edu.sa .
- **Prof. Iqbal Ahmad Khan**, Professor, Department of Electrical Engineering Faculty of Engineering & Islamic Architecture, Umm Al-Qura University, Saudi Arabia P O Box 5555, Makkah 21955. Email: iakhan@uqu.edu.sa.
- **Prof. Amar Bentounsi,** Professor, Department of Electrical Engineering, EEA Polytechnic School of Constantine BP 75, A, Nouvelle ville RP, Constantine, Algeria. Email: amar.trotek@gmail.com.
- **Prof. Makbul Anwari**, Professor, Department of Electrical and Computer Engineering, King Abdulaziz University, Jeddah 21589, Saudi Arabia. Email: makbul.anwari@gmail.com .