

# Curriculum Vitae

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Laboratory of Applied Chemistry,  
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### WORK EXPERIENCE

**Since 2008:** Titular professor: Department of chemistry University of Cadi Ayyad, Marrakesh, Morocco  
([http://www.ucam.ac.ma/fssm/chimie/index\\_chimie.htm](http://www.ucam.ac.ma/fssm/chimie/index_chimie.htm))

**2015:** Visited professor University of Dayton ; Ohio, USA (<https://www.udayton.edu/engineering/index.php>)

**2013-2022:** Associated professor, 2iE, International Institute for Water and Environmental Engineering, Ouagadougou - Burkina Faso, (<http://www.2ie-edu.org>)

**2008-2010:** Associated professor, department of chemical engineering, Laval University, Québec, Canada  
<https://www.gch.ulaval.ca/accueil/>

**2006-2008:** Research scientist COREM, Québec, Canada (<https://www.corem.qc.ca/>)

**2000-2004:** Professor, Department of chemistry, University of Cadi Ayyad, Marrakesh, Morocco,

**1996-2000:** Assistant Professor, Department of chemistry, University of Cadi Ayyad, Marrakesh, Morocco,

### ACADEMIC:

**2003-2006:** Post-Doc, department of chemical engineering, Laval university , Quebec (Canada)

**2001-2002:** Training, Department of Chemistry, Siegen University (Germany)

**2000-2001 :** Training, Department of Inorganic Chemistry Granada University (Spain)

**1997-2001 :** Ph.D. Environmental Chemistry ; University of Cadi Ayyad, Marrakesh, Morocco

**1991- 1992:** Postgraduate thesis; Inorganic Chemistry ; University of Cadi Ayyad, Marrakesh, Morocco

**1991- 1992:** Master, Inorganic Chemistry, University of Cadi Ayyad, Marrakesh, Morocco,

**1987-1991:** Bachelor, Chemistry, University of Cadi Ayyad, Marrakesh, Morocco,

### PROJECTS: SCIENTIFIC, ACADEMIC PROJECTS, CULTURAL EVENT

#### Scientific: (current projects)

1. Direct Flotation of Moroccan Phosphates at Very Low Grade", TechDev Chair, FOCP, Morocco **(2022-2025)**
2. Nanomaterials (MOFs and PCPs) for an environmentally friendly and sustainable handling of perishable products " NANO4FRESH, PRIMA – Partnership for Research and Innovation in the Mediterranean Area **(2019-2023)**
3. "New biofuels from olive residues"; GREEN-INNO PROJECT-IRESEN **(2019-2023)**
4. "Flotation of low-grade of Moroccan phosphate" CNRST-OCP, Morocco **(2016-2019)**
5. "Optimization of the flotation of complex sulphide ores and recycling of process water" National Program for the Development of Sector Research (dev -RS), Morocco **(2011-2020)**.

#### Academic :

1. Erasmus+: EQOSAF: Quality and metrology in higher education for health and environmental analysis in the Maghreb and West Africa **(2023-2026)**
2. AUF Project: MAQMET PROJECT: Implementation of a specialized master's training in Metrology and at the Cadi Ayyad-Marrakech University **(2017-2019)**
3. Erasmus + Project: Quality in Higher Education for Renewable Energy in North and West Africa "(AFREQEN) **2016-2019**
4. European Project: Strengthening Skills in Institutional Assessment (RECET): **2012-2015**.
5. European project: Building Capacity for University Management, (BUCUM): **2012-2015**.
6. European Project: Development of Entrepreneurial Skills at the Moroccan University: Creativity, Knowledge and Culture (DEVEN3C);, **2012-2015**.

7. European Project: Digital Skills Passport to improve the employability of graduates of Moroccan Higher Education (P@lmes): Establishment of a common Moroccan national framework for the certification of transversal skills, **2012-2015**.
8. European Project: Quality in Agronomic Higher Education in the Mediterranean - QESAMED, **2013-2016**.

#### Organizational / managerial skills (last 5 years)

1. Member of the organization Committee "the 8<sup>th</sup> International Conference on Metrology in Africa. CAFMET", **16-19 Mai 2022**, Casablanca, Morocco
2. Coordinator of the working group, Project to develop the manual "Fundamentals of metrology" for higher education institutions in Morocco (Morocco-Germany Technical Cooperation Project, PTB) Promotion of metrology for strengthening international trade in the Maghreb). Component 4 of this project aims to provide support to higher education institutions in integrating metrology into the technical curriculum (**2020-2022**)
3. Member of the organization Committee "Phosphate Days 2020: International conference on phosphates (ICP) : fundamentals, processes and technologies"; 12-17 October **2020** <https://www.phoresnet.org/phosphate-days-2020/>
4. Member of International Biochar initiative (IBI) (**Since 2019**)
5. Member of the team management of the department of Chemistry (**2009-2013; 2021-2023**)
6. Coordinator " 2nd Quality School "Higher Education And Research, Companies, Society" 12-13 December **2019** Marrakech Morocco
7. Member of the member of the faculty management board (Faculty of Sciences Soutal) (**2018-2022**)
8. Member of the organization Committee "the 7<sup>th</sup> International Conference on Metrology in Africa. CAFMET", 09-12 **April 2018**, Marrakech, Morocco
9. Member of African Committee of Metrology (CAFMET) (**Since 2018**)

#### Training: Inter- and Intra-Enterprise training:

- Quality Management
- Optimization of chemical process
- Statistical Process Control (CSP)
- Lean Six Sigma
- Lean Manufacturing
- Experimental Design (DoE)
- Metrology

#### Research interests:

- Optimization of industrial process
- Adsorption process and Interfaces between phases (liquid/gas, solid/gas, ..., )
- Porous materials (activated carbon, zeolite, clay, )
- Synthesis of MOFs and PCPs nanomaterials
- Thermochemical conversion of biomass: Biochar, Activated carbon, Hydrochar...
- Use of biochar in Energy (biocombustible)
- Use of biochar in agriculture- Modeling, simulation and control of industrial processes
- Formulation by Design of experiments (DoE)
- Development and application of activated carbon (CIL, CIP, water treatment, gases ...)
- Water management

#### - Research management -

- PhD student: 15
- Master and DESS students: 70
- PFE License: 120
- PhD student in progress: 12

### List of publications (last 5 years)

1. Yaacoubi, Fatima Ezzahra Send mail to Yaacoubi F.E.; Sekkouri, Chaima; Ennaciri, Karima; Rabichi, Imad; Izghri, Zaina; Baçaoui, Abdelaziz; Yaacoubi, Abdelrani; Synthesis of composites from activated carbon based on olive stones and sodium alginate for the removal of methylene blue; International Journal of Biological Macromolecules, Volume 254, Part 3, January **2024**, 127706. <https://doi.org/10.1016/j.ijbiomac.2023.127706>
2. Mellalou, A., Riad, W., Bacaoui, A., Outzourhit, A.; Experimental investigations on drying kinetics and modeling of two-phase olive pomace dried in a hybrid solar greenhouse dryer, Journal of Thermal Analysis and Calorimetry, **2023**, 148(12), pp. 5471–5483
3. Mikali, M., Barbouchi, A., Idouhli, R., ...Boulaamail, A., Bacaoui, A.; Electrochemical behavior of silver during cyanidation in the presence of sulfide minerals; Chemical Papers, **2023**, 77(4), pp. 2103–2113; <https://doi.org/10.1007/s11696-022-02613-2>
4. Mellalou, A., Riad, W., Bacaoui, A., Outzourhit, A.; Impact of the greenhouse drying modes of two-phase olive pomace on the energy, exergy, economic and environmental (4E) performance indicators; Renewable Energy, **2023**, 210, pp. 229–250; 10.1016/j.renene.2023.04.074
5. Debina, B., Baçaoui, A., Tamafo Fouégué, A.D., ...Yaacoubi, A., Benoît, L.B.; Hydrothermal carbonization of vegetable-tanned leather shavings (HTC-VTS) for environmental remediation: Optimization of process conditions; Royal Society Open Science, **2023**, 10(10), 230302; <https://doi.org/10.1098/rsos.230302>
6. Aarab, I., Amari, K.E., Yaacoubi, A., Etahiri, A., Baçaoui, A.; Optimization of the Flotation of Low-Grade Phosphate Ore Using DOE: a Comparative Evaluation of Fatty Acid Formulation to Sodium Oleate; Mining, Metallurgy and Exploration, **2023**, 40(1), pp. 95–108; <https://doi.org/10.1007/s42461-022-00706-w>
7. Izghri, Z., Ennaciri, K., Enaïme, G., ...Bacaoui, A., Yaacoubi, A., The ability of drinking water treatment sludge to degrade methylene blue in water through combined adsorption/photo Fenton-like process; Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering, **2023**, 58(12), pp. 981–990 <https://doi.org/10.1080/10934529.2023.2277622>
8. K. Boujounoui, A. Abidi, A. Baçaoui, K. El Amari, D. He, and A. Yaacoubi; Effect of zinc process water recycling on galena flotation from a complex sulphide ore; Journal of the Southern African Institute of Mining and Metallurgy, **2023**; 122(11), pp. 647-654; DOI 10.17159/2411-9717/241/2022
9. H.Bensouda, C.Hakim, H.Aziam, A.Bacaoui, I.Saadoun "Effect of NaOH impregnation on the electrochemical performances of hard carbon derived from olive seeds biomass for sodium ion batteries" Materialstoday, [Volume 51, Part 6, 2022](https://doi.org/10.1016/j.matpr.2022.01.337), Pages 2066-2070 (<https://doi.org/10.1016/j.matpr.2022.01.337>)
10. Mohammed Derqaoui, Imane Aarab, Abdelmoughit Abidi, Abdelrani Yaacoubi, Khalid El Amari, Abderahman Etahiri, Abdelaziz Baçaoui; Valorization of Seaweeds Biomass as Source an Eco-Friendly and Efficient Depressant of Calcite in the Flotation of Apatite Containing Ore; Waste and Biomass Valorization; vol. 13, issue 5, **2022**; p. 2623-2636; DOI: 10.1007/s12649-022-01675-3
11. Mohammed Derqaoui, Imane Aarab, Abdelmoughit Abidi, Abdelrani Yaacoubi, Khalid El Amari, Abderahman Etahiri, Abdelaziz Baçaoui; The effect of calcium ions on the flotation behavior of fluorapatite;; Mineral Processing and Extractive Metallurgy Review, **2022**; p. 1-10; <https://doi.org/10.1080/08827508.2022.2132944>
12. Aarab I, Amari KE, Yaacoubi A, Etahiri A, Baçaoui A. Optimization of the Flotation of Low-Grade Phosphate Ore Using DOE: a Comparative Evaluation of Fatty Acid Formulation to Sodium Oleate. Mining, Metallurgy & Exploration **2022**. DOI: 10.1007/s42461-022-00706-w
13. Enaïme, G., Baçaoui, A., Yaacoubi, A. Hydrothermal carbonization of the filter bed remained after filtration of olive mill wastewater on olive stones for biofuel application. Biomass Conv. Bioref. 12, 1237–1247, **2022**. <https://doi.org/10.1007/s13399-020-00743-9>
14. Mikali, M., Barbouchi, A., Idouhli. Electrochemical behavior of silver during cyanidation in the presence of sulfide minerals. Chem. Pap. (**2022**). <https://doi.org/10.1007/s11696-022-02613-2>
15. Mellalou Abderrahman, Bacaoui Abdelaziz, Outzourhit Abdelkader; Thermal performances and kinetics analyses of greenhouse hybrid drying of two-phase olive pomace: Effect of thin layer thickness; Renewable Energy, Volume 199, November **2022**, Pages 407-418; 10.1016/j.renene.2022.09.012
16. Mellalou Abderrahman, Bacaoui Abdelaziz, Outzourhit Abdelkader; CFD Modeling of An Even-Span Greenhouse Dryer Under Natural and Forced Convection Modes; Journal of Physics: Conference Series; vol. **2022**, issue 1, p. 012030; DOI: 10.1088/1742-6596/2022/1/012030
17. Mellalou, A., Mouaky, A., Bacaoui, A. A comparative study of greenhouse shapes and orientations under the climatic conditions of Marrakech, Morocco. Int. J. Environ. Sci. Technol. 19, 6045–6056 (**2021**). <https://doi.org/10.1007/s13762-021-03556-z>
18. Derqaoui, M., Aarab, I., Abidi, A., Yaacoubi, A., El Amari, K., Etahiri, A., and Baçaoui, A. "Review of the reagents used in the direct flotation of phosphate ores." Arabian Journal of Geosciences 15, 49 (**2021**). <https://doi.org/10.1007/s12517-021-09293-4>

19. Abderrahman Mellalou, Walid Riad, Salma Kaotar Hnawi, Abdelaziz Tchenka, Abdelaziz Bacaoui, Abdelkader Outzourhit; Experimental and CFD Investigation of a Modified Uneven-Span Greenhouse Solar Dryer in No-Load Conditions under Natural Convection Mode; International Journal of Photoenergy; vol. **2021**, issue undefined, p. 1-12; DOI: 10.1155/2021/9918166
20. Abderrahman Mellalou, Walid Riad, Ammar Mouaky, Abdelaziz Bacaoui, Abdelkader Outzourhit; Optimum design and orientation of a greenhouse for seasonal winter drying in Morocco under constant volume constraint; Solar Energy; Volume 230, December **2021**, Pages 321-332; <https://doi.org/10.1016/j.solener.2021.10.050>
21. Abderrahman MELLALOU, Ammar MOUAKY, Cheikh SAMB VALL, Lau YUI-YIP, Abdelaziz BACAOUI, Abdelkader OUTZOURHIT; Performance Of An Air Solar Collector With Different Absorber Modifications Under The Climatic Conditions Of Marrakech-Morocco; Journal of the Institute of Science and Technology; Year 2021, Volume 11, Issue 3, 2195 - 2207, **01.09.2021**; DOI: 10.21597/jist.893224
22. Aarab, I., Derqaoui, M., El Amari, K., Yaacoubi, A., Abidi, A., Etahiri, A., and Baçaoui, A. "Influence of surface dissolution on reagents' adsorption on low-grade phosphate ore and its flotation selectivity." Colloids and Surfaces A: Physicochemical and Engineering Aspects, Vol. 631, **2021**, p. 127700. <https://doi.org/10.1016/j.colsurfa.2021.127700>
23. Aarab, I., Derqaoui, M., Abidi, A., Yaacoubi, A., El Amari, K., Etahiri, A., and Baçaoui, A. "Direct flotation of low-grade Moroccan phosphate ores: A preliminary micro flotation study to develop new beneficiation routes." Arabian Journal of Geosciences 13, 1252 (**2020**). <https://doi.org/10.1007/s12517-020-06279-6>
24. Aarab, I., Derqaoui, M., El Amari, K., Yaacoubi, A., Abidi, A., Bacaoui, A., and Etahiri, A. "The challenging passage through micro-flotation to mechanical flotation cell: Case of low-grade Moroccan phosphates." In Proceedings of the 2nd International Conference on Research in Engineering and Technology. Germany, **2020**. <https://www.doi.org/10.33422/2nd.research.2020.09.233>
25. G. Enaïme, E. Netmann, S. Berzio, A. Baçaoui, A. Yaacoubi, M. Wichern, T. Gehring and M. Lübken, Performance and microbial analysis during long-term anaerobic digestion of olive mill wastewater in a packed-bed biofilm reactor, (**2020**) Chemical technology and biotechnology, Volume 95, numéro 3, pp. 850-861; doi: 10.1002/jctb.6275
26. G. Enaïme, A. Baçaoui, A. Yaacoubi, M. Wichern and M. Lübken. Hydrothermal carbonization of the filter bed remained after filtration of olive mill wastewater on olive stones for biofuel application, Biomass Conversion and Biorefinery, (**2020**) <https://doi.org/10.1007/s13399-020-00743-9>
27. G. Enaïme, A. Baçaoui, A. Yaacoubi, M. Wichern and M. Lübken. Biochar for Wastewater Treatment—Conversion Technologies and Applications, Appl. Sci. (**2020**), 10, 3492; doi:10.3390/app10103492
28. G. Enaïme, A. Baçaoui, A. Yaacoubi, M. Belaïziz, M. Wichern and M. Lübken Phytotoxicity assessment of olive mill wastewater treated by different technologies: effect on seed germination of maize and tomato, Environmental Science and Pollution Research, (**2020**) <https://doi.org/10.1007/s11356-019-06672-z>
29. A. Abidi, Kh. Boujounoui, Kh. El Amari, A. Bacaoui, and A. Yaacoubi. Contribution to Improve Water Process Recycling in the Flotation Plant of a Complex Zn-Pb-Cu Sulphide Ore, Journal of Mining Science, 2019, Vol. 55, No. 4, pp. 658–667. © Pleiades Publishing, Ltd., (**2019**) (DOI: 10.1134/S1062739119046014)
30. Enaïme, G., Baçaoui, A., Yaacoubi, A., Wichern, M., Lübken, M. Olive mill wastewater pretreatment by combination of filtration on olive stone filters and coagulation–flocculation, Environmental Technology (United Kingdom) (**2019**) 40(16), pp. 2135-2146
31. M. Louarrat, G. Enaïme, A. Bacaoui, A. Yaacoubi, J. Blin, L. Martin. Optimization of conditions for the preparation of activated carbon from olive stone and its application in the gold mining industry. J. S. Afr. Inst. Min. Metall. (**Mar. 2019**) vol.119 n.3 ; *On-line version* ISSN 2411-9717; *Print version* ISSN 2225-6253
32. Z. Izghri, G. Enaïme, M. Louarrat, L. El Gaini, A. Baçaoui and A. Yaacoubi, Novel catalyst from two-phase olive mill wastes using hydrothermal carbonisation for the removal of methylene blue by heterogeneous Fenton-like oxidation, International Journal of Environmental Analytical Chemistry, (**2019**) <https://doi.org/10.1080/03067319.2019.1643461>
33. K. Boujounoui, A. Abidi, A. Bacaoui, K. El Amari, A. Yaacoubi, "Effect of water quality on the performance of the galena and blend flotation: case of Draa Sfar complex sulphide ore, Morocco" Mor. J. Chem. 7 N°2 (**2019**) 337-345.
34. Nkwaju Yanou Rachel, Baçaoui Abdelaziz, Ndi Julius Nsami, Kouotou Daouda, Yaacoubi Abdelrani, Lourrat Mehdi, Lafdi Khalid, Ketcha Mbadcam Joseph "Antibacterial properties of AgNO<sub>3</sub>-activated carbon composite on Escherichia coli: inhibition action" International Journal of Advanced Chemistry, ) (6) (1) (**2018**) 46 52 (doi: 10.14419/ijac.v6i1.9048), <https://www.sciencepubco.com/index.php/IJAC/article/view/9048>
35. K. Boujounoui, A. Abidi, A. Bacaoui, K. Elamari, A. Yaacoubi. « Flotation Process Water Recycling Investigation for the Complex Draa Sfar Sulphide Ore, Morocco. Mine water and the environment, Mine Water and the Environment, (**March 2018**), Volume 37, Issue 1, pp 75–87
36. Ba, S., Ennaciri, K., Yaacoubi, A., Alagui, A., Bacaoui, A. Activated carbon from olive wastes as an adsorbent for chromium ions removal, Iranian Journal of Chemistry and Chemical Engineering, (**2018**), 37(6), pp. 107-123