

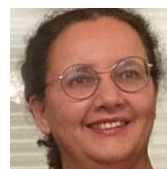
## Hayet DJELAL

Teacher researcher- Habilitation to lead research.

UniLaSalle Rennes-École des Métiers de l'Environnement (EME)

Campus de Ker Lann, 35170 Bruz-France

[hayet.djelal@unilasalle.fr](mailto:hayet.djelal@unilasalle.fr)



- ✓ [Orcid.org/0000-0002-5619-2633](https://orcid.org/0000-0002-5619-2633)
- ✓ <https://scholar.google.com/citations?user=CNTgCIgAAAAJ>
- ✓ [https://www.adscientificindex.com/scientist/hayet-djelal/917747#google\\_vignette](https://www.adscientificindex.com/scientist/hayet-djelal/917747#google_vignette)
- ✓ <https://www.linkedin.com/in/hayet-djelal-852a1671/>

## ACADEMIC CREDENTIALS AND QUALIFICATIONS

2018	Qualification as University Professor (62 <sup>ème</sup> Section of national university council)
2017	Habilitation to lead research, Chemical Sciences, Université de Rennes 1, France.
1992	PhD of Université de Rennes 1, Chemical Sciences, Laboratoire CNGE, ENSCR, France.
1986	Diplôme of Advanced Studies in Chemistry (DEA) de chimie, option valorisation des ressources agricoles, Université de Rennes 1, laboratoire CNGE, ENSCR, France.
1985	Diplôme in sanitary engineering, Ecole Nationale Polytechnique d'Alger, Algeria.

## PROFESSIONAL EXPERIENCE

Since 1993	Teacher researcher, Unilasalle-Ecole des Métiers de l'Environnement (EME), Campus de Ker Lann, Bruz-France.
2020-2023	Teaching ENSCR (35), Traitement des micropolluants, 6h équivalent TD, 15 élèves, Master 2 Quatro.
2021-2023	Teaching UR1 (35), Valorisation des bio-déchets, 6h équivalent TD, 10 élèves, Master 2 Microbiologie _ Unité d'Enseignement "Valorisation des déchets Biologiques-Bioremediation" (UE VDB).
2020-2022	Teaching UBS Lorient (56), Bioénergie et valorisation de la biomasse, 13h équivalent TD, 30 élèves, Master 2 thermique énergétique.
2011-2019	Associate researcher, Ecole Nationale Supérieure de Chimie de Rennes (ENSCR), Institut des Sciences Chimiques de Rennes (ISCR), UMR CNRS 6226, Université de Rennes 1, équipe Chimie et Ingénierie des Procédés
2003-2018	Teaching, IUT Rennes (35), Bactériologie, analyses des eaux de consommation, analyses des eaux usées, 64 h équivalent TD, DUT première et deuxième année
1993	Teaching, Département de Génie Civil, Béthune (62), Traitement des eaux usées 30 h équivalent TD, 30 élèves, deuxième année de DUT.
1993	Study engineer, maison familiale Rurale, Riaillé (44) (4 mois).
1992-1993	Study engineer, Compagnie Générale des Eaux, Montceau les Mines (71) (6 mois).

## RESEARCH ACTIVITIES

**Research topics:** development of processes for the treatment of organic micropollutants and industrial effluents, biomass recovery for bioenergy (CH<sub>4</sub>, H<sub>2</sub>, ethanol), project management, innovation, and transfer.

**Research projects:** involvement in research projects as a manager or a participant, including 1 European project (Interreg Manche), 1 CIFRE (Industrial Agreements for Training through Research) contract, 1 ANR (National Research Agency), 1 regional (Brittany), 2 ADEME (French Environment and Energy Management Agency), 1 Oséo-Innovation and industries. She is also implicated in **international collaborations** (Algeria, Lebanon, Mexico, Tunisia, Belgium).

1 patent, 70 articles in peer-reviewed scientific journals, 90 international and national congresses, 16 invited conferences, 18 conferences for socio-economic players and support for public action, 21 conferences as part of the dissemination of scientific and technical culture (public/school children).

Co-organisation of a Thematic Day on green gases (2023), Co-organisation of a webinar on anaerobic digestion (2021), organization of a Technical Day on the valorization of effluents from the dairy industry, EME, France.

Co-leader of the green gases thematic group of Bretagne Eco-Entreprises (35).

Member of the research and higher education working group on hydrogen of the Brittany Regional Council. mission Committee member, Sublime Energie France.

## TEACHING, SUPERVISORY ACTIVITIES

Teaching in the first and second engineering cycle, bachelor's degree: Water pollution and treatment, Biomass energy and material recovery, Bioprocesses, anaerobic digestion, integrated approach, Project management. Responsible for the teaching of students in the 3<sup>rd</sup> year of the engineering cycle and for professionalization contracts.

Management or co-supervision of: 12 PhD theses (including 1 in progress), 4 study engineers, 9 Masters 2, 12 M1/L3/Bachelor.

## Patents

D. Floner, R. Abdallah, F. Geneste, H. Djelal, F. Fourcade, **A. Amrane**. *Réacteur en flux dédié à la transformation d'une solution concentrée de nitrates en diazote par des réactions électrochimiques successives et contrôlées*. French patent n° 14/60828, November 2014.

## International Publications (2020→)

1. Kechkar M., Aziza M., Bessah R. Abada S., **Djelal H.**, Ahmed Zaid T., Amrane A. (2024) Optimization and kinetic study of the bioethanol production by a locally isolated strain using response surface methodology. *Biomass Conv. Bioref.* <https://doi.org/10.1007/s13399-024-05807-8>.
2. Sayed W., Cabrol A., Salma A., Amrane A., Benoit M., Pierre R., **Djelal H.** (2024) Green Macroalgae Hydrolysate for Biofuel Production: Potential of *Ulva rigida*. *Applied Microbiology* 4, 563–581. <https://doi.org/10.3390/applmicrobiol4020039>.
3. Reynosode la Garza A., Zeghioud H., Benítez-Rico A., Romero-Núñez A., **Djelal H.**, Chávez-Miyauchi T.E., Guillén-Cervantes J.A. (2024), Visible LED active photocatalyst based on cerium doped titania for Rhodamine B degradation: Radical's contribution, stability and response surface methodology optimization, *Materials Science in Semiconductor Processing* 176, 108349. <https://doi.org/10.1016/j.mssp.2024.108349>.
4. Salma A., Fryda, L., **Djelal H.** (2024) Biochar: A Key Player in Carbon Credits and Climate Mitigation, *Resources* 13, 31. <https://doi.org/10.3390/resources13020031>.
5. **Djelal H.**, Haddouche D., Lebreton M., Barros V., Villegas C., Dabert P. (2024), Impact of Doxycycline Addition on Activated Sludge Microflora and Microbial Communities. *Processes* 2, 12, 350. <https://doi.org/10.3390/pr12020350>.
6. Quevit V., Laferte J.M., Fougères A.J., **Djelal H.**, Dillenseger J.L., Jalenques E. (2023), Improving Petri Dish Labels with AI Algorithms, 5th International Conference on Advances in Signal Processing and Artificial Intelligence (ASPAI' 2023), Tenerife (Canary Islands), Spain.
7. Quevit V., Laferte J.M., Fougères A.J., **Djelal H.**, Dillenseger J.L., Jalenques E. (2023), Amélioration de l'étiquetage automatique des boîtes de Pétri avec des algorithmes d'IA. 29<sup>o</sup> Colloque sur le traitement du signal et des images, GRETSI'23, GRETSI, Grenoble, France, 1065-1068.
8. Chadelaud T., Zeghioud H., Reynoso de la Garza A., Fuerte O., Benítez-Rico A., Revel M., Chávez-Miyauchi T.E., **Djelal H.** (2023), Comparative study of Rhodamine B treatment: Assessing of efficiency processes and ecotoxicity of by-Products, *Processes*, 11(8), 2363. <https://doi.org/10.3390/pr11092671>.
9. Salma A., Binti Faeruz N.M., Fryda L., **Djelal H.** (2023), Harnessing Digestate Potential: Impact of Biochar and Reagent Addition on Biomethane Production in Anaerobic Digestion Systems, *Processes*, 11, 2284. <https://doi.org/10.3390/pr11082284>.
10. Sabba N., Belkabila M., Youcef R., **Djelal H.**, TALEB AHMED M. (2023), Contribution of the electrochemical process in the treatment of paint effluents. *Journal of Fundamental and Applied Science* 15(1). <https://doi.org/10.4314/jfas.1267>.
11. Bensaïbi F., Chabani M., Souad Bouafia S., **Djelal H.**\* (2023), Doxycycline removal by solar photo-Fenton on a pilot-scale composite parabolic collector (CPC) reactor, *Processes*, 11(8), 2363; <https://doi.org/10.3390/pr11082363>.
12. Youcef R., Sabba N., Benhadji A., **Djelal H.**\*, Fakhfakh N.\*, Taleb Ahmed M. (2022), Nanofiltration treatment of industrial wastewater doped with organic dye: Hydrodynamics study and Specific energy, *Processes*, 10, 2277. <https://doi.org/10.3390/pr10112277>.
13. Zeghioud H., Fryda L., **Djelal H.**, Assadi A., Kane A. (2022), A comprehensive review of biochar in removal of organic pollutants from wastewater: characterization, toxicity, activation/functionalization and influencing treatment factors, *Journal of Water Process Engineering*, 47, 102801. <https://doi.org/10.1016/j.jwpe.2022.102801>.

14. Ng M., Dalhatou S., Wilson J., Kamdem B.P., Temitope M.B., Paumo H.K., **Djelal H.**, Assadi A.A., Nguyen-Tri P., Kane A.\* (2022), Characterization of Slaughterhouse Wastewater and Development of Treatment Techniques: A Review, *Processes*, 10, 1300, <https://doi.org/10.3390/pr10071300>.
15. Cherif S., Bonnet P., Frezet L., Kane A., Assadi A.A., Trari M., Yazid H., **Djelal H.**, (2022) The photocatalytic degradation of a binary textile dyes mixture within a new configuration of loop reactor-phytotoxicity control, *Comptes Rendus Chimie*, 25(3), 261-279. <https://doi.org/10.5802/crchim.198>.
16. Cherif S., **Djelal H.**, Firmin S., Bonnet P., Frezet L., Kane A., Assadi A.A., Trari M., Yazid H. (2022), Impact of material design on the photocatalytic removal efficiency and toxicity of two textile dyes, *Environ Science Pollution Research Journal*, 29, 66640–66658. <https://doi.org/10.1007/s11356-022-20452-2>.
17. Khellaf N., **Djelal H.**, Amrane A. (2022), An Overview of the Valorization of Aquatic Plants in Effluent Depuration through Phytoremediation Processes, *Applied Microbiology*, 2, 309-318.
18. Bchir S., Hassen W., Alibi S., Jaziri A., Beltifa A., Mansour H., **Djelal H.**, Ben Mansour H. (2022), Creening of physicochemical and bacteriological parameters of the soap industry wastewater: Development of an efficient treatment models, *Journal of New Sciences*, 89(3) <https://doi.org/10.55416/sunb.jns01.2207.08903>.
19. Dufossé K., Marie-Charlotte M., Augiseau V., Henrion T., Djelal H. (2021), Quantification and environmental assessment of wood ash from biomass power plants: case study of Brittany region in France, *Sustainability*, 14(1), 99. <https://doi.org/10.3390/su14010099>.
20. Salma A., **Djelal H.**, Abdallah R., Fourcade F., Amrane A. (2021), Well Knowledge of the Physiology of *Actinobacillus succinogenes* to Improve Succinic Acid Production, *Applied Microbiology*, 1, 304–328. <https://doi.org/10.3390/applmicrobiol1020022>
21. Salma A., Abdallah R., Fourcade F., Amrane A., **Djelal H.** (2021), A new approach to produce
22. succinic acid through a co-culture system, *Applied Biochemistry and Biotechnology*, 193(9) 2872-2892. <https://doi.org/10.1007/s12010-021-03572-2>
23. Salma A., **Djelal H.**, Abdallah R., Fourcade F., Amrane A. (2021), Platform molecule from sustainable raw materials; case study succinic acid, Review Article, *Brazilian Journal of Chemical Engineering*, 38 215-239. <https://doi.org/10.1007/s43153-021-00103-8>.
24. Aboudalle A., **Djelal H.**, Domergue L., Fourcade F., Amrane A. (2021), A novel system coupling an electro-Fenton process and an advanced biological process to remove a pharmaceutical compound, metronidazole, *Journal of Hazardous Materials*, 415 125705.
25. Youcef R., Benhadji A., Zerrouki D., Fakhakh N., **Djelal H.**, Taleb Ahmed M. (2021), The electrochemical synthesis of CuO-ZnO for efficient sonocatalysis degradation of Brilliant Blue (FCF) in comparison with the hybrid Sonophotocatalysis treatment: Kinetic and optimization study, *Reaction Kinetics, Mechanisms and Catalysis*, 133(1) 541-561. <https://doi.org/10.1007/s11144-021-01961-6>.
26. Zeghioud H., Assadi A.A., Khellaf N., **Djelal H.**, Bouhelassa M., Amrane A., Ritmi S. (2021), Combining photocatalytic process and biological treatment for reactive green 12 degradation: optimisation, mineralization and phytotoxicité with seeds germination, *Environ Science Pollution Research Journal*, 28 12490-12499. <https://doi.org/10.1007/s11356-020-11282-1>.
27. Khelifa Zoughi L.Y.S., **Djelal H.**, Salem Z. (2021), Anaerobic co-digestion of three organic wastes under mesophilic conditions: lab-scale and pilot-scale studies, *Environment, Development and Sustainability*, 23 9014-9028. <https://doi.org/10.1007/s10668-020-01009-0>.
28. **Djelal H.**, Estrada Martinez P., Haddouche D., Chabani M. (2020), Assessment of the biodegradation of doxycycline by biostimulation with addition of glucose, phenol or/and copper, *Ecocycles*, 6 (2) 25-31. <https://doi.org/10.19040/ecocycle.v6i2.175>.
29. Hocini I., BENABBAS K., KHELLAF N., **Djelal H.**, Amrane A., (2020), Identification of the Mechanism Involved in the Removal Potential of Textile Pollutants by the Aquatic Plant *Lemna gibba* L., *Journal of Chemical Health Risks*, 10 (2) 145-153.
30. ROUIBAH I., ZEGHIOUD H., KHELLAF N., ASSADI A.A., BEN MANSOUR H., **Djelal H.**, Amrane A. (2020), Intensified photocatalytic degradation of Solophenyl Scarlet BNLE in simulated textile effluents using TiO<sub>2</sub> supported on cellulosic tissue, *International Journal of Chemical Reactor Engineering*, 18 (2) 20190117 <https://doi.org/10.1515/ijcre-2019-0117>.