CURRICULUM VITAE



Personal Data

Name: El Hajjaji First name: Souad

Vice dean of research and cooperation, Mohammed V University in Rabat

Head of Water, natural resources, environment, and sustainable development research center Head of Laboratory of S3MN2E, Department of Chemistry, Faculty of sciences of Rabat Mohammed V University in Rabat, Av Ibn Battouta, BP1014, Agdal, Rabat, Morocco

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Specialty: Materials Science and Environmental Chemistry

2. Degrees held

- 1991 DEA Material science, INP-Toulouse, France
- 1994 PhD Material science, INP-Toulouse, France
- 1999 PhD Material science, Mohammed V University in Rabat, Morocco

1. Professional Appointments

- 1994-1996 Post-doctoral researcher, ENSCT- INP-Toulouse, France
- 1996-1999 Assistant professor, Mohammed V University in Rabat, Morocco
- 1999-2003 Habilitate professor, Mohammed V University in Rabat, Morocco
- 2003 until now Professor, Mohammed V University in Rabat, Morocco
- 2017 -2024 Head of CERNE2D, Mohammed V University in Rabat, Morocco
- 2021 until now: Vice dean of research and cooperation- Faculty of Science Rabat

SCIENTIFIQUES ACTIVITY (https://orcid.org/0000-0003-1467-704X) HI: 25

- Up to 228 publications
- Up to 300 communications
- Coordinator of an international Master with the University Paul Sabatier- Toulouse (France) in analytical sciences and Environment.
- Coordinator of bachelor on "valorization des produits du Terroir".
- Coordinator of LIA in molecular chemistry and responsible of projets.
- Partner of an integrated action with Spain, France, Hungary, and Germany.
- Partner with ministry of environment for programs (PCB and POPS).
- Coordinator of ERANETHMED project (2018-2021).
- Coordinator of project of Artificial intelligence on water (2021-2024).
- Coordinator of 3 PRIMA projects.
- Coordinator of project with Sweden, South Africa and UM6P on biochars and wastewater treatment.
- Coordinator of project with suisse PROJECT-BASED CLIMATE EDUCATION IN MOROCCAN UNIVERSITIES: Introducing Project-Based Climate Education in Moroccan Universities via a New Air Quality Monitoring Network in Rabat.
- Participant in empower Tunisia (emergent pollutants in water).
- Regional expert, project 31 and 35 (center of excellence CBRN).

- Associate member of EXCEED-Swindon
- Coordinator of the team working on the preparation of reports in relation to the Consultation for the contribution in the implementation of the national monitoring plan of POPs resulting from the GMP2-Africa project under the Stockholm Convention.
- Expert with the CNRST- Morocco (until now).
- Expert with UM6P.
- Expert with Leading House MENA Suisse (2024).
- Trainer on safety and security of chemical products.
- Evaluator of the proposals submitted to the cofounded call within the ERA-NET FOSC Climate Change and Food Systems.
- Member of MARSU project (MARine atmospheric Science Unravelled: Analytical and mass spectrometric techniques development and application).
- Co-organization of meetings in environment fields.
- Member of scientific committee of Water Institute.

Memberships in Scientific Societies

- General Secretary of the Moroccan association for the environment and sustainable developement
- Vice president of Société Maghrébine pour un Meilleur usage des Matières Chimiques (S3MC)
- Vice president of Moroccan Globe Association for Environment.
- Vice presidente of REUNET.
- Member of the Coordinating Committee of the Moroccan Coalition for Water (COALMA) and president of scientific committee.
- Membership in scientific boards of international journals
- Trainer in Positive Communication, Leadership, Gender Approach, Conflict Management and Time Management

Current research topics in the following fields (Work Experience - Technical Skills):

- Water management; Water pollution; Wastewater treatment processes (adsorption, photocatalysis...), desalinization of water;
- Solid waste valorization (biochars, nanomaterials, ...);
- Modeling (MRE);
- Electrochemistry, sensors, modified electrodes.
- Materials synthesis and characterizations
- Pesticides chemistry (Photodegradation and monitoring of pesticides in water and soil (POPs));
- Air pollution;
- AI applied for monitoring water and air quality;
- Life cycle assessment

Publications (2022-2023)

- 1. Bouiti, K., Lahrache, N., Bouhouche, I., Labjar, N., Bensemlali, M., El Hajjaji, S., Benabdallah, G.A., Nasrellah, H.(2023) pp. 263-292. DOI: 10.1515/9783111016160-011
- 2. Bouhachlaf, L., Benslimane, O., El Hajjaji, S.(2023) 9 (4), pp. 756-766. DOI: 10.1002/wwp2.12151
- 3. Benslimane, O., Rabie, R., Saidi, O., Itqiq, S.E., Bouzida, I., Lakssir, B., EL Hajjaji, S.(2023) 29, art. no. 100879;DOI: 10.1016/j.measen.2023.100879
- 4. Mourabit, Y., El Hajjaji, S., Taha, D., Badaoui, B., El Yadini, M., Rusu, M.E., Lee, L.-H., Bouyahya, A., Bourais, I.(2023) 52, art. no. 102817, . DOI: 10.1016/j.bcab.2023.102817
- 5. Kdimy, A., Kim, S.J., Ali, Z., Khan, M.I.H., Tripathi, S.K., El Hajjaji, S., Le, H.V.(2023) 20 (9), art. no. e202300903. DOI: 10.1002/cbdv.202300903
- 6. Lbadaoui-Darvas, M., Lbadaoui, A., Labjar, N., El Hajjaji, S., Nenes, A., Takahama, S.,

- Roy, A.(2023) 418, art. no. 05003. DOI: 10.1051/e3sconf/202341805003
- 7. Maftouh, A., El Fatni, O., El Hajjaji, S., Jawish, M.W., Sillanpää, M.(2023) 13 (4), art. no. 397. DOI: 10.33263/BRIAC134.397
- 8. Bouyahia, C., Benbouzid, M., El Hajjaji, S., Slaoui, M., Bentata, F., Labhilili, M., Bouyahya, A.(2023) 10 (2), pp. 297-312. DOI: 10.21448/jsm.1047122
- 9. Maftouh, A., Fatni, O.E., Bouzekri, S., Bahaj, T., Kacimi, I., Hajjaji, S.E., Malik, A.(2023) 11 (2), art. no. 1100437, . DOI: 10.13044/j.sdewes.d10.0437
- 10. Drhimer, F., Rahmani, M., Regraguy, B., El Hajjaji, S., Mabrouki, J., Amrane, A., Fourcade, F., Assadi, A.A.(2023) 15 (7), art. no. 5788, .DOI: 10.3390/su15075788
- 11. Al-Jadabi, N., Laaouan, M., El Hajjaji, S., Mabrouki, J., Benbouzid, M., Dhiba, D.(2023) 15 (5), art. no. 4280, . DOI: 10.3390/su15054280
- 12. El Joumri, L., Labjar, N., Dalimi, M., Harti, S., Dhiba, D., El Messaoudi, N., Bonnefille, S., El Hajjaji, S.(2023) 45, art. no. 100800, . DOI: 10.1016/j.envdev.2022.100800
- 13. Bahaj, I., Labjar, N., Kaddami, M., Essahli, M., Lotfi, E.M., Dahrouch, A., El Hajjaji, S.(2023) 9 (1), art. no. 4, . DOI: 10.1007/s40735-022-00727-4
- 14. Ahmadou, F., Bourais, I., Aqil, Y., Shariati, M.A., Hlebová, M., Martsynkovsky, S., Nagdalian, A., El Hajjaji, S.(2023) 13 (2), art. no. e10250, . DOI: 10.55251/jmbfs.10250
- 15. Kherraf, S., Bakkouche, C., Barhmi, S., Mabrouki, J., Hajjaji, S.E., Elfatni, O., Dhiba, D., Maissine, K.(2023) 19 (4), pp. 348-355. DOI: 10.2174/1573411019666230221143245
- 16. Ansar, M.E., Hsissou, R., Ibrahimi, B.E., Addi, A.A., Molhi, A., Damej, M., El Hajjaji, S., Benmessaoud, M.(2023) 12 (3), pp. 1065-1087. DOI: 10.17675/2305-6894-2023-12-3-16
- 17. Brahim, K.A.B., Bendany, M., El Hamdouni, Y., Abbi, K., Bakkouche, C., Fattoumi, H., Hermouche, L., Labjar, N., Dalimi, M., El Hajjaji, S.(2023) 23 (15), pp. 1464-1476. DOI: 10.2174/1568026623666230210115740
- 18. Benslimane, O., Rabie, R., El Hajjaji, S.(2023) 713 LNNS, pp. 462-468. DOI: 10.1007/978-3-031-35248-5_41
- 19. Errili, M., Al Maofari, A., Tassaoui, K., Damej, M., Lakbaibi, Z., Et-Tahir, A., El Hajjaji, S., Benmessaoud, M.(2023) 12 (2), pp. 458-476. DOI: 10.17675/2305-6894-2023-12-2-5
- 20. Sadki, R., Dalimi, M., Labjar, N., Benabdallah, G.A., El Hajjaji, S.(2023) 11 (3), pp. 594-612. DOI: 10.48317/IMIST.PRSM/morjchem-v14i03.38683
- 21. Drhimer, F., Rahmani, M., Regraguy, B., Bouiti, K., El Hajjaji, S., Labjar, N., Mabrouki, J., Amrane, A., Assadi, A.A.(2023). DOI: 10.1080/03067319.2023.2227580
- 22. Lahrache, N., Bouiti, K., Labjar, N., El Hajjaji, S.(2023) pp. 191-215. DOI: 10.1016/B978-0-443-15783-7.00002-5
- 23. Aqil, Y., Hajjaji, S.E., Belmaghraoui, W., Mourabit, Y., Taha, D., Alshahrani, M.M., Al Awadh, A.A., Bouyahya, A., Gaamoussi, I., Bourais, I. (2023) 2023, art. no. 8535139. DOI: 10.1155/2023/8535139
- 24. Ahmadou, F., Bencheikh, I., Bensemlali, M., Azoulay, K., Mabrouki, J., Nasrellah, H., Laasri, S., Slimani, R., El Hajjaji, S.(2023) 98, art. no. 22. DOI: 10.1051/epjap/2023220252
- 25. Benabdallah, G.A., Kouri, H., Labjar, N., Bouiti, K., Bouissoui, E.M., Dahrouch, A., Hajjaji, S.E.(2023) 12 (1), pp. 292-308. DOI: 10.17675/2305-6894-2023-12-1-17
- 26. Yadini, A.E., Saufi, H., Perez, E., Blanzat, M., Franceschi-Messant, S., El Hajjaji, S.(2023) 12 (1), pp. 32-47. DOI: 10.17675/2305-6894-2023-12-1-2
- 27. Mabrouki, J., Benchrifa, M., Ennouhi, M., Azoulay, K., Bencheikh, I., Rachiq, T., El-Moustaqim, K., Al-Jadabi, N., Azrour, M., Fatima-zahra, A.-E., El Hajjaji, S.(2023) 635 LNNS, pp. 469-474. DOI: 10.1007/978-3-031-26254-8 67
- 28. Jaddoudi, S., Dahchour, A., El Hajjaji, S., Düring, R.A., El Hourch, A.(2023) 11 (1), pp. 77-95. DOI: 10.48317/IMIST.PRSM/morjchem-v11i1.35083

- 29. Ahmadou, F., Abahdou, F.-Z., Slimani, R., El Hajjaji, S.(2023) 11 (1), pp. 265-281. DOI: 10.48317/IMIST.PRSM/morjchem-v11i1.34864
- 30. Ait lhaj, F., Elhamri, H., Ait lhaj, Z., Malisch, R., Kypke, K., Kabriti, M., El Hajjaji, S., Bellaouchou, A.(2023) 40 (2), pp. 282-293. DOI: 10.1080/19440049.2022.2154852
- 31. Bouyahia, C., Rahmani, M., Bensemlali, M., El Hajjaji, S., Slaoui, M., Bencheikh, I., Azoulay, K., Labjar, N.(2023) 6, pp. 114-123. DOI: 10.1016/j.mset.2022.12.004
- 32. Bourais, I., Elmarrkechy, S., Taha, D., Mourabit, Y., Bouyahya, A., El Yadini, M., Machich, O., El Hajjaji, S., El Boury, H., Dakka, N., Iba, N.(2023) 39 (9), pp. 6199-6249. DOI: 10.1080/87559129.2022.2094401
- 33. Ellouzi, I., El Hajjaji, S., Harir, M., Schmitt-Kopplin, P., Robert, D., Laânab, L.(2023) 44 (11), pp. 2190-2199. DOI: 10.1080/01932691.2022.2065292
- 34. Rahmani, M., Mabrouki, J., Regraguy, B., Moufti, A., El'Mrabet, M., Dahchour, A., El Hajjaji, S.(2023) 103 (18), pp. 6495-6509. DOI: 10.1080/03067319.2021.1957466
- 35. Hermouche, L., Bendany, M., Abbi, K., El Hamdouni, Y., Labjar, N., El Mahi, M., Lotfi, E.M., Dalimi, M., Dhiba, D., El Hajjaji, S.(2023) 103 (17), pp. 5887-5909. DOI: 10.1080/03067319.2021.1946525
- 36. Aboubakar, A., El Hajjaji, S., Douaik, A., Mfopou Mewouo, Y.C., Birang a Madong, R.C., Dahchour, A., Mabrouki, J., Labjar, N.(2023) 103 (15), pp. 3522-3543. DOI: 10.1080/03067319.2021.1910251
- 37. Azoulay, K., Bencheikh, I., Mabrouki, J., Samghouli, N., Moufti, A., Dahchour, A., El Hajjaji, S.(2023) 103 (7), pp. 1633-1652. DOI: 10.1080/03067319.2021.1878165
- 38. Bourais, I., Elmarrkechy, S., Taha, D., Badaoui, B., Mourabit, Y., Salhi, N., Alshahrani, M.M., Al Awadh, A.A., Bouyahya, A., Goh, K.W., Tan, C.S., El Hajjaji, S., Dakka, N., Iba, N.(2022) 27 (24), art. no. 8989, . DOI: 10.3390/molecules27248989
- 39. Taha, D., El Hajjaji, S., Mourabit, Y., Bouyahya, A., Lee, L.-H., El Menyiy, N., Tarik, A., Benali, T., El Moudden, H., Gallo, M., Iba, N., Bourais, I.(2022) 11 (23), art. no. 3348. DOI: 10.3390/plants11233348
- 40. Regraguy, B., Ellouzi, I., Mabrouki, J., Rahmani, M., Drhimer, F., Mahmou, C., Dahchour, A., El Mrabet, M., El Hajjaji, S.(2022) 5 (6), pp. 1945-1958. DOI: 10.1007/s42247-022-00403-w
- 41. El Hamdouni, Y., El Hajjaji, S., Szabó, T., Trif, L., Felhősi, I., Abbi, K., Labjar, N., Harmouche, L., Shaban, A.(2022) 15 (11), art. no. 104252, . DOI: 10.1016/j.arabjc.2022.104252
- 42. Azgaou, K., Damej, M., Hajjaji, S.E., Sebbar, N.K., Elmsellem, H., Ibrahimi, B.E., Benmessaoud, M.(2022) 1266, art. no. 133451, . DOI: 10.1016/j.molstruc.2022.133451
- 43. Kdimy, A., El Yadini, M., Guaadaoui, A., Bourais, I., El Hajjaji, S., Le, H.V.(2022) 19 (10), art. no. e202200300, .
- 44. Ellouzi, I., Regraguy, B., El Hajjaji, S., Harir, M., Schmitt-Kopplin, P., Lachheb, H., Laânab, L.(2022) 12 (3), pp. 283-293. DOI: 10.30495/ijc.2022.1941684.1875
- 45. Al-sharabi, H., Bouiti, K., Bouhlal, F., Labjar, N., Dahrouch, A., El Mahi, M., Lotfi, E.M., El Otmani, B., Benabdellah, G.A., El Hajjaji, S.(2022) 8 (3), art. no. 78, . DOI: 10.1007/s40735-022-00675-z
- 46. galaa, S., Mabrouki, J., Elouardi, M., El Azzouzi, L., Moufti, A., El Hajjaji, S., EL Azzouzi, M., El Belghiti, M.A.(2022) 7 (3), pp. 691-697. DOI: 10.1007/s41204-022-00262-0
- 47. Labjar, N., Hajjaji, S.E.(2022) 1418, pp. 141-154. DOI: 10.1021/bk-2022-1418.ch006
- 48. Rachiq, T., Samghouli, N., Mabrouki, J., El-Moustaqim, K., Rahmani, M., Al-Jadabi, N., Hajjaji, S.E., Rahal, S.(2022) 261, pp. 131-140. DOI: 10.5004/dwt.2022.28524
- 49. Elmakaoui, A., Bourais, I., Oubihi, A., Nassif, A., Bezhinar, T., Shariati, M.A., Blinov,

- A.V., Hleba, L., El Hajjaji, S.(2022) 11 (6), art. no. e7559. DOI: 10.55251/jmbfs.7559
- 50. Mabrouki, J., Fattah, G., Al-Jadabi, N., Abrouki, Y., Dhiba, D., Azrour, M., Hajjaji, S.E.(2022) 8 (2), pp. 2853-2862. DOI: 10.1007/s40808-021-01200-w
- 51. Loukili, H., Anouzla, A., Jioui, I., Achiou, B., Alami Younssi, S., Azoulay, K., Bencheikh, I., Mabrouki, J., Abrouki, Y., Sebbahi, S., Bourais, I., Sabbar, A., Labjar, N., Hajjaji, S.E., Azzallou, R., Azrour, M., El Ghanjaoui, M.A., Salah, M., Tahiri, S., Riadi, Y.(2022) 14 (3), pp. 1305-1310. DOI: 10.1007/s41870-022-00906-z
- 52. Damej, M., Hsissou, R., Berisha, A., Azgaou, K., Sadiku, M., Benmessaoud, M., Labjar, N., El hajjaji, S.(2022) 1254, art. no. 132425. DOI: 10.1016/j.molstruc.2022.132425
- 53. Anouzla, A., Kastali, M., Azoulay, K., Bencheikh, I., Fattah, G., Mabrouki, J., Elhassani, C.E., Ouadil, B., El Moustaqim, K., Bakkouche, C., Moussadik, A., Mouhir, L., Digua, K., Souabi, S., Khaoulaf, R., El Hajjaji, S., Loukili, H., Saffaj, N., Azrour, M., Abrouki, Y.(2022) 254, pp. 71-79. DOI: 10.5004/dwt.2022.28388
- 54. Regraguy, B., Rahmani, M., Mabrouki, J., Drhimer, F., Ellouzi, I., Mahmou, C., Dahchour, A., Mrabet, M.E., Hajjaji, S.E. (2022) 7 (1), pp. 157-171. DOI: 10.1007/s41204-021-00206-0
- 55. Samghouli, N., Regraguy, B., Abahdou, F.-Z., Azoulay, K., Bencheikh, I., Mabrouki, J., El Hajjaji, S.(2022) 337, art. no. 05001, . DOI: 10.1051/e3sconf/202233705001
- 56. Bouhachlaf, L., Mousli, F., El hajjaji, S.(2022) 337, art. no. 01006. DOI: 10.1051/e3sconf/202233701006
- 57. Al-Jadabi, N., Laaouan, M., Benbouzid, M., Mabrouki, J., El Hajjaji, S.(2022) 337, art. no. 02003. DOI: 10.1051/e3sconf/202233702003
- 58. Damej, M., Molhi, A., Tassaoui, K., El Ibrahimi, B., Akounach, Z., Addi, A.A., El hajjaji, S., Benmessaoud, M.(2022) 7 (2), art. no. e202103192. DOI: 10.1002/slct.202103192
- 59. Al-Sharabi, H.A., Bouhlal, F., Bouiti, K., Bensemlali, M., Labjar, N., Benabdellah, G.A., Dahrouch, A., Laasri, S., El Mahi, M., Lotfi, E.M., El Otmani, B., El Hajjaji, S.(2022) 97, art. no. 76. DOI: 10.1051/epjap/2022220130
- 60. Mabrouki, J., Azrour, M., Boubekraoui, A., El Hajjaji, S. (2022) 13 (1). DOI: 10.4018/IJSESD.315309
- 61. Rachiq, T., Azoulay, K., Bencheikh, I., Mabrouki, J., El-Moustaqim, K., Al-Jadabi, N., Hajjaji, S.E., Rahal, S.(2022) 9, pp. 42-51. DOI: 10.15379/2410-1869.2022.05
- 62. Mabrouki, J., Fattah, G., Kherraf, S., Abrouki, Y., Azrour, M., El Hajjaji, S.(2022) pp. 69-88. DOI: 10.1201/9781003304203-4
- 63. Bouyahia, C., Slaoui, M., Gouiti, M., Ouassor, I., Harhar, H., Hajjaji, S.E.(2022) 37 (1), pp. 63-74. DOI: 10.31648/pjns.7395
- 64. Bouhachlaf, L., Mabrouki, J., Hajjaji, S.E.(2022) pp. 235-244. DOI: 10.1201/9781003226147-13
- 65. Bouiti, K., Al-Sharabi, H.A., Bensemlali, M., Bouhlal, F., Abidi, B., Labjar, N., Laasri, S., El Hajjaji, S.(2022) 97, art. no. 67, . DOI: 10.1051/epjap/2022220070
- 66. Al-Sharabi, H., Bouiti, K., Bouhlal, F., Labjar, N., Benabdellah, G.A., Dahrouch, A., Hermouch, L., Kaya, S., Ibrahimi, B.E., Mahi, M.E., Lotfi, E.M., Otmani, B.E., Hajjaji, S.E.(2022) 11 (3), pp. 956-984. DOI: 10.17675/2305-6894-2022-11-3-4
- 67. Bouiti, K., Al-Sharabi, H.A., Bouhlal, F., Labjar, N., Dahrouch, A., El Mahi, M., Lotfi, E.M., El Otmani, B., Benabdallah, G.A., El Hajjaji, S.(2022) 11 (3), pp. 1319-1334.DOI: 10.17675/2305-6894-2022-11-3-24
- 68. Bouyahia, C., Slaoui, M., AL-Sharabi, H., El Bakraoui, H., El Hajjaji, S.(2022) 10 (4), pp. 738-751. DOI: 10.48317/IMIST.PRSM/morjchem-v10i4.32146
- 69. Taha, D., Bourais, I., El Hajjaji, S., Bouyahya, A., Khamar, H., Iba, N.(2022) 28 (4), pp.

- 351-369. DOI: 10.1080/10496475.2022.2068723
- 70. Al-Sharabi, H.A., Bouhlal, F., Bouiti, K., Labjar, N., Al Zalaei, E., Dahrouch, A., Benabdellah, G.A., El Mahi, M., Benmessaoud, B., Lotfi, E.M., El Otmani, B., El Hajjaji, S.(2022) 11 (1), pp. 382-401. DOI: 10.17675/2305-6894-2022-11-1-23
- 71. Akounach, Z., Al Maofari, A., Damej, M., El Hajjaji, S., Berisha, A., Mehmeti, V., Labjar, N., Bamaarouf, M., Benmessaoud, M.(2022) 11 (1), pp. 402-424. DOI: 10.17675/2305-6894-2022-11-1-24
- 72. Kouri, H., Bouhlal, F., Bouisoui, E.M., Labjar, N., Benabdellah Amine, G., Dahrouch, A., Savaş, K., El Ibrahimi, B., Benzaouak, A., Serghini-Idrissi, M., El Hajjaji, S.(2022) 11 (1), pp. 173-197. DOI: 10.17675/2305-6894-2022-11-1-10
- 73. Tassaoui, K., Damej, M., Molhi, A., Berisha, A., Errili, M., Ksama, S., Mehmeti, V., Hajjaji, S.E., Benmessaoud, M.(2022) 11 (1), pp. 221-244. DOI: 10.17675/2305-6894-2022-11-1-12
- 74. Abbi, K., Hermouche, L., El Hamdouni, Y., Rahmani, M., Benhsina, E., Labjar, N., Skalli, A., El Mahi, M., Lotfi, E.M., Dalimi, M., El Hajjaji, S.(2022). DOI:10.1080/03067319.2022.2036982
- 75. Jari, Y., Roche, N., Necibi, M.C., El Hajjaji, S., Dhiba, D., Chehbouni, A.(2022) 2022, art. no. 9727857. DOI: 10.1155/2022/9727857
- 76. Mabrouki, J., Azoulay, K., Elfanssi, S., Bouhachlaf, L., Mousli, F., Azrour, M., El Hajjaji, S.(2022) pp. 103-115. DOI: 10.1007/978-3-030-90083-0_8
- 77. Samghouli, N., Bencheikh, I., Azoulay, K., Abahdou, F.-Z., Mabrouki, J., El Hajjaji, S.(2022) pp. 29-42. DOI: 10.1007/978-3-030-90083-0_3
- 78. Rachiq, T., Mabrouki, J., El Hajjaji, S., Rahal, S.(2022) pp. 19-27.DOI: 10.1007/978-3-030-90083-0_2
- 79. Azoulay, K., Bencheikh, I., Samghouli, N., Mabrouki, J., Moufti, A., El Hajjaji, S.(2022) pp. 53-69. DOI: 10.1007/978-3-030-90083-0_5
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