

## FICHE IDENTITAIRE

Identité de la structure :

Equipe/laboratoire :	Equipe d'Energie Solaire et Plantes Aromatiques et Médicinales
Acronyme :	EESPAM
Responsable :	IDLIMAM Ali
Département :	Physique
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Membres de la structure :

Membres permanents :	<p>IDLIMAM Ali PES, Enseignant Chercheur          KOUHILA Mohammed PES, Enseignant Chercheur          LAMHARRAR Abdelkader PES, Enseignant Chercheur          RHAZI M'Barek PES, Enseignant Chercheur          AGHFIR Mohamed PESA, Enseignant Chercheur</p> <p>Bahammou Younes, Doctorant          Tagnamass Zakaria, Doctorant          Kouhila Mounir, Doctorant          Moussaoui Haytem, Doctorant          Lamsyehe Hamza, Doctorant          El Hari Yassir, Doctorant</p>
Membres associés :	<p>ABDENOURI Naji FST, Gueliz          AIT AGHAZZAF Ahmed FS - Tétouan</p>

Domaines d'intérêts de la structure :

Thématiques de recherche :	Caractérisation thermophysique, hygroscopique et chimique des plantes aromatiques et médicinales et des produits agroalimentaires par séchage solaire en convection forcée en vue d'une meilleure conservation et valorisation
Axes de recherche :	<ul style="list-style-type: none"> <li>• Etude expérimentale et modélisation des isothermes de sorption et des cinétiques de séchage solaire convectif des PAM et PAA.</li> <li>• Développement de l'énergie solaire en vue d'une efficacité énergétique optimale</li> <li>• Modélisation des transferts couplés de chaleur et de masse</li> </ul>
Compétences/Savoir-faire :	Modélisation – Détermination de la courbe caractéristique de séchage – Isothermes de sorption – hygroscopicité des PAM et PAA
Productions :	1. Younes Bahammou, Hamza Lamsyehe, Mounir Kouhila, Abdelkader Lamharrar, Ali Idlimam, Naji Abdenouri (2019). Valorization of co-products of sardine waste by physical

- treatment under natural and forced convection solar drying, Renewable Energy, Volume 142, November 2019, Pages 110-122.
2. Haytem Moussaoui, Younes Bahammou, Ali Idlimam, Abdelkader Lamharrar, Naji Abdenouri (2019). Investigation of hygroscopic equilibrium and modeling sorption isotherms of the argan products: a comparative study of leaves, pulps and fruits, Food and bioproducts processing 114, 12-22.
  3. Haytem Moussaoui, Ahmed Ait Aghzzaf, Ali Idlimam, Abdelkader Lamharrar (2019). Modeling the solar drying of dandelion leaves by factorial experimental design, Euro-Mediterranean Journal for Environmental Integration 4(1), 4: 5.
  4. El Houssayne Bougayr, El Khadir Lakhal, Ali Idlimam, Abdelkader Lamharrar, Mohamed Kouhila, Fatiha Berroug (2018). Experimental study of hygroscopic equilibrium and thermodynamic properties of sewage sludge, Applied Thermal Engineering 143, 521-531.
  5. Rachida Ouaaboua, Bouchra Nabil, Nadia Hidar, Lamyae Lahnine, Ali Idlimam, Abdelkader Lamharrar, Hafida Hanine, Mostafa Mahrouz (2018). Valorization of solar drying process in the production of dried Moroccan sweet cherries, Solar Energy, Volume 172, Part 2, 15 September 2018, Pages 158-164.
  6. Soukaina Hilali, Anne Sylvie Fabiano-Tixier, Mohamed Elmaataoui, Emmanuel Petitcolas, Abdessamed, Hejjaj, Fatima Aitnouh, Ali Idlimam, Magali Jacotet-Navarro, Antoine Bily, Laila Mandi, and Farid Chemat (2018). Deodorization by Solar Steam-Distillation of Rosemary Leaves Prior to Solvent Extraction of Rosmarinic, Carnosic, and Ursolic Acids, ACS sustainable Chemistry and Engineering 6(8), 10969-10979.
  7. Safa Mghazli, Mourad Ouhammou, Nadia Hidar, Lamyae Lahnine, Ali Idlimam, Mostapha Mahrouz (2017). Drying characteristics and kinetics solar drying of Moroccan rosemary leaves, Renewable Energy 108, 303-310.
  8. Abdelghani Koukouch, Ali Idlimam, Mohamed Asbik, Brahim Sarh, Boujemaa Izrar, Stéphane Bostyn, Abdellah Bah, Omar Ansari, Omar Zegaoui, Amina Amine (2017). Experimental determination of the effective moisture diffusivity and activation energy during convective solar drying of olive pomace waste, Renewable Energy, in press. Renewable Energy 101, 565-574.
  9. H. Mouhanni, A. Idlimam, A. Bendou, A. Lamharrar (2016).

	<p>Thermophysical modeling of drying kinetics of Taliouine Saffron irrigated by the porous system, <i>International Journal of Scientific &amp; Engineering Research</i>, Volume 7, Issue 9, September-2016.</p> <p>10. Idlimam Ali, Lamharrar Abdelkader, Bougayr El Houssaynea, Kouhila Mohamed, Lakhel El Khadirb (2016). Solar convective drying in thin layers and modeling of municipal waste at three temperatures, <i>Applied Thermal Engineering</i> 108 (2016) 41-47.</p> <p>11. Abdelkader Lamharrar, Ali Idlimam, Mohamed Kouhila, Lamyae Lahnine, Hind Mouhanni (2016). Moisture Sorption Isotherms And Thermodynamic Properties Of <i>Urtica Dioica</i> Leaves, <i>European Scientific Journal</i> August 2016 edition vol.12, No.24 376-388.</p> <p>12. Lamyae Lahnine, Ali Idlimam, Mostafa Mahrouz, Safa Mghazli, Nadia Hidar, Hafida Hanine , Abbes Koutit (2016). Thermophysical characterization by solar convective drying of thyme conserved by an innovative thermal-biochemical process, <i>Renewable Energy</i> 94 (2016) 72-80.</p> <p>13. Lamyae Lahnine, Ali Idlimam, Mostafa Mahrouz, Amane Jada, Hafida Hanine, Mohamed Mouhib, Said Zantar, Mohamed Kouhila (2016). Adsorption measurements and modeling of thyme treated with gamma irradiation and thermal-biochemical treatment, <i>Industrial Crops and Products</i> 88 (2016) 36-43.</p> <p>14. Lahnine L, Ouhammou M, Idlimam A, Mahrouz M, Lamharrar A, Hanine H, Bouchdoug M, Kouhila M (2016). Comparative sorption isotherms of conserved <i>Thymus satureioides</i>, <i>Mor. J. Chem.</i> 4 N°1 (2016)128-139</p> <p>15. Lamyae Lahnine, Ali Idlimam, Mostafa Mahrouz, Mohamed Kouhila, Hafida Hanine, Mohamed Mouhib, Said Zantar, Abderrahim Jaouad (2015). Thermodynamical properties of conserved thyme after gamma irradiation and thermal-biochemical treatment, <i>Journal of Materials and Environmental Science (JMES)</i> 6 (9) (2015) 2418-2426.</p> <p>16. Abdelghani Koukouch, Ali Idlimam, MohamedAsbik, Brahim Sarh, Boujemaa Izrar, Abdellah Bah, Omar Ansari (2015). Thermophysical characterization and mathematical modelling of convective solar drying of raw olive pomace, <i>Energy Conversion and Management</i>, Volume 99, 15 July 2015, Pages 221-230.</p> <p>17. H. Mouhanni, A. Bendou, A. Idlimam (2015). Experimental approach for drying saffron of Taliouine-Morocco. <i>International Review of PHYSICS</i> Vol 9, No 1 (2015) pp 1-6.</p>
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18. A. Idlimam, A. Lamharrar, A. Koukouch, M. Kouhila and M. Asbik (2014). Study of solar drying process and moisture desorption isotherm of Moroccan zygophyllum gaetulum by forced convection, International Journal of Engineering and Management Research (IJEMR)., 4(5), pp 139-146.
19. A. Lamharrar, A. Idlimam, M. Cherkaoui, L. Lahnine, and M. Kouhila (2014). Thermodynamic properties and modeling of sorption isotherms for longer storage of Urtica urens leaves. International Journal of Modern Engineering research (IJMER). 4(12), pp 23-30.
20. A. Lamharrar, A. Idlimam and M. Kouhila (2014). Thin layer forced convective solar drying characteristics of Artemisia herba-alba, Journal of Materials and Environmental Science (JMES)., acceptée.