CURRICULUM VITAE

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PROFIL

Miloud RAHMOUNE est Professeur de l'Enseignement Supérieur (grade D) au département de Génie Electrique de l'Ecole Supérieure de Technologie de l'Université Moulay Ismail de Meknès. Ses thèmes de recherche portent sur la mécanique des structures, le contrôle actif des vibrations, la récupération d'énergie, la mécanique multi-échelles, la mécanique numérique avec ses applications aux matériaux avancés, matériaux intelligents, matériaux pour l'énergie et à l'efficacité énergétique. Il est également vice-président de la Société Marocaine des Sciences Mécaniques. La plupart des activités sont réalisées en appui à des partenaires industriels et institutionnels. Des subventions de recherche pour soutenir les travaux ont été obtenues auprès de l'Université Moulay Ismail, de la Commune Urbaine de Meknès et de l'IRESEN. Actuellement, les recherches portent sur le contrôle actif des vibrations, les capteurs et actionneurs piézoélectriques, les nouveaux modèles d'interfaces complexes, les nouvelles méthodes de mise en relation d'échelles combinées à des approches d'ordre réduit et aux problèmes multi-physiques, la conception de nouveaux composites pour l'efficacité énergétique. Ses activités pédagogiques couvrent tous les niveaux, du DUT (Mécanique Classique, Métrologie, Résistance des Matériaux), à la licence (Mécanique des Milieux Continus, Mécanique des fluides, Turbomachines), et au master (Mécanique des fluides Avancée), jusqu'au doctorat (couplage multiphysique, contrôle actif, efficacité énergétique). Il a encadré plus de 13 doctorants, dont 7 sont aujourd'hui professeurs, tandis que la plupart des autres anciens doctorants ont poursuivi avec succès une carrière dans l'industrie.

DOMAINES DE COMPETENCE

Mécanique des Structures, Calcul de Structures, Vibrations des structures, Couplages multiphysiques, Contrôle actif, Récupération d'énergie, Capteurs, Actionneurs, Matériaux intelligents, Matériaux d'Isolation thermique.

FORMATIONS ET DIPLOMES

1996 : Doctorat d'Etat en Mécatronique, Université Hassan II – Mohammedia, MAROC.
1994 : Doctorat d'Université en Mécanique des Matériaux, Université Montpellier II, France.

1991 : Diplôme d'Etudes Approfondies, en Modèles théoriques pour la Physique, Université Montpellier II, France.

1990 : Licence en Physique, Université Hassan II – Mohammedia, MAROC.

ACTIVITES PEDAGOGIQUES

- **Chargé de l'enseignement :** Mécanique des Milieux Continus, Résistance des Matériaux, Mécanique classique, Ondes et vibrations, Machines thermiques, Mécanique des fluides, Métrologie et Mesure, Turbomachines et énergie éolienne, Matériaux et structures intelligentes, Propriétés des Matériaux.
- **Chargé de la Coordination de filières :** MST Energétique, MST IEEA, LP Energies Renouvelables et Efficacité Energétique, Université Moulay Ismail, Meknès.
- **Coordination et Participation à l'élaboration de plusieurs projets de filières.**
- **Chargé de la Coordination de plusieurs modules.**
- **Production pédagogique :** Mécanique des Milieux Continus, Résistance des Matériaux, Mécanique classique, Ondes et vibrations, Machines thermiques, Mécanique des fluides, Métrologie et Mesure, Turbomachines et énergie éolienne, Matériaux et structures intelligentes, Propriétés des Matériaux, Thermodynamique.
- **Montage de salles de travaux pratiques :** Propriétés des matériaux, Métrologie et mesure, Mécanique des fluides, Turbomachines, Energie éolienne.
- **Encadrement de Projets de fin d'étude :** 176
- **Production de supports didactiques interactifs.**
- **Animation des expositions Scientifiques :** au profit des étudiants et lycéens en partenariat avec l'Institut Français-Meknès, 2010, 2008, 2005, 2006.
- **Parrainage de club des étudiants.**

ACTIVITES SCIENTIFIQUES

- **Production scientifique**
  - Projets et actions de recherche : **7.**
  - Ouvrages ou chapitres d'ouvrages : **29**.
  - Articles indexés scopus : **71.**
  - Communications à comités de lecture : **135.**
  - **https://www.researchgate.net/profile/Rahmoune-Miloud**
  - **https://www.scopus.com/authid/detail.uri?authorId=6602107367**
  - **https://orcid.org/0000-0002-1156-689X**
  - **https://scholar.google.com/citations?hl=fr&user=Mekd427MCoIC**
- **Doctorats encadrés : 13**
- **Participation aux Jurys de Thèses : 87.**
- **Participation aux Jurys d'habilitation : 18.**
- **Expertise Scientifique**
  - Membre rapporteur de thèses de doctorat : **59**.
  - Membre rapporteur d'habilitations universitaires : **13.**
  - Referee de plusieurs journaux scientifiques : **32.**
  - Membre de comités scientifiques de congrès : **25.**

- Expert au CNRST: 2020-2023: **7 projets.**

- **Animations et diffusion scientifiques :** Plusieurs Congrès et écoles thématiques organisés : **51.**
- **Responsabilités scientifiques :**
  - **1996 – 1998 :** Co-fondateur du groupe de modélisation mécanique et technique numériques, FST, Université Moulay Ismail.
  - **1998 – 2005 :** Responsable du laboratoire de mécanique & calcul scientifique, FST, Université Moulay Ismail.
  - **2003 – 2007 :** Responsable de l'UFR doctorale sciences de l'ingénieur, FST, Université Moulay Ismail.
  - **2005 - 2007** : Responsable de l'équipe mécanique, matériaux et systèmes, EST, Université Moulay Ismail.
  - **2008 - 2012** : Responsable de l'équipe systèmes et matériaux pour la mécatronique, EST, Université Moulay Ismail.
  - **2014 - 2018** : Membre fondateur de l'équipe de recherche matériaux avancés et systèmes énergétiques, FST, Université Moulay Ismail.
  - **2015 - 2019** : Membre fondateur du laboratoire d'étude des matériaux avancés et applications, FSM-ESTM, Université Moulay Ismail.

ACTIVITES ADMINISTRATIVES

- Membre du conseil de l'Université Moulay Ismail : 03.
- Membre de conseil de l'établissement (FSTE et ESTM) : 08.
- Membre de la commission pédagogique (FSTE et ESTM).
- Membre de la commission de suivi du budget (FSTE et ESTM).
- Membre du collège de département (FSTE et ESTM).
- Membre de commissions scientifiques (FSTE et ESTM) : 03.
- Membres de la commission académique du conseil de l'université : 01.
- Chef de département (FSTE) : 01.
- Vice-Président de la Société Marocaine des Sciences Mécaniques (Maroc).
- Membre d'International Institute of Acoustics and Vibration (USA).
- Membre de International Scientific Academy of Engineering & Technology (ISAET, USA)
- Membre de International Association of Engineers (IAENG), Japan.
- Membre de commissions de recrutement de Professeurs Assistants : 29.
- Président de la Commission de passage PH-PES, 2022, Université Hassan II-Casablanca.

LISTE DES ARTICLES INDEXES SCOPUS

1. LQR and LQG-Kalman active control comparison of smart structures with finite element reduced-order modeling and a Monte Carlo simulation (2022) Frontiers in Mechanical Engineering, 8, art. no. 912545.

2. Energetic, economic and environmental (3E) analyses and LCOE estimation of three technologies of PV grid-connected systems under different climates (2019) Solar Energy, 178, pp. 25 – 36.
3. Comparison between single-diode and two diodes models of a grid connected pv technologies : Numerical study and experimental validation (2020) International Journal of Power Electronics and Drive Systems, 11 (2), pp. 914 – 920.
4. Submillimeter and far infrared spectroscopic analysis of a ferroelectric poly (vinylidene fluoride) copolymer (1994) Ferroelectrics, 159 (1), pp. 245 – 250.
5. Piezopolymer transducers in the active control of vibrations (1994) 8th International Symposium on Electrets, ISE 1994 - Proceedings, art. no. 515259, pp. 985 – 990.
6. Vibrations analysis of multi-layered sandwich composites with piezoelectric sensor/actuator. Application to antifouling process (2003) Proceedings of the Tenth International Congress on Sound and Vibration, pp. 5071 – 5082.
7. Structural and magnetic properties of Fe films grown on GaAs, (1994) Journal de physique. III, 4 (5), pp. 859 – 865.
8. The impact of covid-19 on the logistics and transportation sectors in Morocco (2023) 2023 3rd International Conference on Innovative Research in Applied Science, Engineering and Technology, IRASET 2023.
9. Vibrational control of elastic structures by piezopolymer transducers - models and experimental results (1996) Proceedings - International Symposium on Electrets, pp. 1055 – 1060.
10. Experimental investigation on the combined effect of the water mixing ratio and the addition of spent coffee grounds on plaster's thermo-mechanical properties (2022) Thermal Science and Engineering Progress, 36, art. no. 101488.
11. Real time weed detection using a boosted cascade of simple features (2016) International Journal of Electrical and Computer Engineering, 6 (6), pp. 2755 – 2765.
12. Effects of rotation and thermoelastic/pyroelectric couplings on the dispersion of acoustic surface waves in a piezothermoelastic half-space (2010) Advances and Trends in Structural Engineering, Mechanics and Computation - Proceedings of the 4th International Conference on Structural Engineering, Mechanics and Computation, SEMC 2010, pp. 121 – 126.
13. Thermal and economic analyses of different glazing systems for a commercial building in various moroccan climates (2021) International Journal of Energy for a Clean Environment, 22 (3), pp. 15 – 41.
14. Analysis of interfacial reactions of Fe films on monocrystalline GaAs (1997) Journal of Magnetism and Magnetic Materials, 175 (3), pp. 219 – 227.
15. Study of ion-beam mixing at a Fe/GaAs interface (1997) Journal of Magnetism and Magnetic Materials, 165 (1-3), pp. 237 – 241.
16. Exploring the thermal behaviour and thermo-mechanical properties of Ferula Communis reinforced plaster and mortar composites : An integrated experimental and numerical approach (2023) Energy Conversion and Management, 289, art. no. 117119.
17. Effect of Fineness and Ash Replacement Rate on Mortar Physical Properties: An Experimental Investigation (2024) Lecture Notes in Mechanical Engineering, pp. 246 – 254.

18. Application of piezoelectricity for marine fouling prevention in oceanographic sensors (1995) Ferroelectrics, 171 (1), pp. 373 – 379.
19. Component mode synthesis and stochastic perturbation method for dynamic analysis of large linear finite element with uncertain parameters (2020) Journal of Mechanical Engineering and Sciences, 14 (2), pp. 6753 – 6769.
20. Some particular design considerations for optimum utilization of under floor heating systems (2018) Case Studies in Thermal Engineering, 12, pp. 423 – 432.
21. Experimental and numerical study of pool boiling heat transfer of liquid nitrogen LN2: Application to the brass ribbon cooling in horizontal position(2017) International Journal of Mechanical and Mechatronics Engineering, 17 (2), pp. 74 – 82.
22. Application of mechanical waves induced by piezofilms to marine fouling prevention (1996) Journal of Intelligent Material Systems and Structures, 7 (1), pp. 33 – 43.
23. Thermoelastic and pyroelectric coupling effects on dynamics and active control of smart structures using finite element method with localized thermopiezoelectric elements (2010) Advances and Trends in Structural Engineering, Mechanics and Computation - Proceedings of the 4th International Conference on Structural Engineering, Mechanics and Computation, SEMC 2010, pp. 127 – 132.
24. Experimental study and numerical simulation of a floor heating system in a three-dimensional model : Parametric study and improvement (2023) Applied Thermal Engineering, 233, art. no. 121151.
25. An experimental investigation on the thermophysical properties of a composite basis of natural fibers of alfa (2017) International Journal of Mechanical and Mechatronics Engineering, 17 (4), pp. 37 – 42.
26. Smart system model : thin plate with distributed sensors and actuators (1996) Proceedings of SPIE - The International Society for Optical Engineering, 2779, pp. 876 – 882.
27. A transmission electron microscopy study of interfacial reactions in the Fe/GaAs system (1996) Thin Solid Films, 289 (1-2), pp. 261 – 266.
28. Energy Assessment and Economic Study of Solar Floor Heating System in Different Climates in Morocco (2023) Journal of Solar Energy Engineering, Transactions of the ASME, 145 (1), art. no. 011005.
29. Thermal insulation improvement in construction materials by adding spent coffee grounds : An experimental and simulation study (2019) Journal of Cleaner Production, 209, pp. 1411 – 1419.
30. Colloidal aggregation in polymer blends (2005) Journal of Chemical Physics, 122 (24), art. no. 244913.
31. Roughness effects of textured surfaces in hydrodynamic lubrication (2022) International Journal of Applied Mechanics and Engineering, 27 (3), pp. 9 – 21.
32. Robust Control and Thermal Analysis of a Reduced Model of Kirchhoff Composite Plate with Random Distribution of Thermopiezoelectric Sensors and Actuators (2022) Journal of Composites Science, 6 (8), art. no. 242.
33. A simulation study of the impact of the COVID-19 crisis on the energy demand of a building located in a semi-arid climate in Morocco (2022) 2022 2nd International Conference on Innovative Research in Applied Science, Engineering and Technology, IRASET 2022.

34. Experimental study of the intensification of heat transfer by pool boiling LN2: Application to cooling of a brass ribbon in horizontal position (2016) Frontiers in Heat and Mass Transfer, 7 (1).
35. A fast and efficient shape descriptor for an advanced weed type classification approach (2016) International Journal of Electrical and Computer Engineering, 6 (3), pp. 1168 – 1175.
36. Optically smart thin materials for building cooling (2020) Eco-efficient Materials for Reducing Cooling Needs in Buildings and Construction : Design, Properties and Applications, pp. 355 – 399.
37. Active vibration control of sandwich FGM beam with piezoelectric sensor/actuator (2017) International Journal of Applied Engineering Research, 12 (20), pp. 9338 – 9345.
38. Active Vibration Control of Timoshenko Sigmoid Functionally Graded Porous Composite Beam with Distributed Piezoelectric Sensor/Actuator in a Thermal Environment (2023) Designs, 7 (1), art. no. 2.
39. Finite element reduced order models for nonlinear vibrations of large systems with uncertain parameters (2016) ICSV 2016 - 23rd International Congress on Sound and Vibration : From Ancient to Modern Acoustics
40. Dynamic Control of Non-Linearly Tapering FGM Beams (2022) Eurasia Proceedings of Science, Technology, Engineering and Mathematics, 18, pp. 46 – 54
41. Benchmark study of rock slope stability through generalized Hoek-Brown criterion: a case study of an open pit in Sudan (2022) International Journal of Mining and Geo-Engineering, 56 (1), pp. 11 – 18.
42. Dynamic analysis and active control of distributed piezothermoelastic fgm composite beam with porosities modeled by the finite element method (2021) Composites: Mechanics, Computations, Applications, 12 (1), pp. 57 – 74.
43. Experimental study and modeling of three grid-connected photovoltaic technologies of meknes city (2018) International Journal of Power Electronics and Drive Systems, 9 (1), pp. 390 – 396.
44. Experimental Study of the Thermal Behavior of Plaster Incorporating a Phase Change Material (2024) Lecture Notes in Mechanical Engineering, pp. 375 – 384.
45. An Experimental Investigation of the Water Blending Rate Effect on the Plaster's Thermo-Mechanical Properties (2023) AIP Conference Proceedings, 2761 (1), art. no. 080002.
46. Frequency analysis of nonlinear structures with uncertainties parameters using polynomial chaos Expansion (2017) 24th International Congress on Sound and Vibration, ICSV 2017.
47. Rotation and thermal effects on the rayleigh wave propagating upon a thermopiezoelectric half-space (2010) 17th International Congress on Sound and Vibration 2010, ICSV 2010, 4, pp. 2865 – 2872.
48. Thermal Performance Analysis of Functional Parameters of the Floor Heating System in Africa (2023) Statistics, Optimization and Information Computing, 11 (1), pp. 154 – 167.
49. Influence of the mixing water rate on the plaster thermo-physical properties: Experimental and dynamic study (2022) E3S Web of Conferences, 336, art. no. 00012.

50. Active Vibration Control of Non-uniform Section Beam (2024) Lecture Notes in Mechanical Engineering, pp. 13 – 22.
51. Dynamic control of Euler Bernoulli FG porous beam under thermal loading with bonded piezoelectric materials (2020) Ferroelectrics, 558 (1), pp. 104 – 116.
52. An advanced high quality roasting approach of argan kernels based on images processing techniques (2015) International Journal of Applied Engineering Research, 10 (21), pp. 41910 – 41914.
53. Modelisation of flexural and transverse vibrations of thin plates equipped with piezopolymer transducers. Application to sensors immersed in fluid and submarine fouling protection (1994) 8th International Symposium on Electrets, ISE 1994 - Proceedings, art. no. 515260, pp. 991 – 996.
54. Formulation by finite element of piezocomposite kirchchoff plate for marine antifouling process (2010) 17th International Congress on Sound and Vibration 2010, ICSV 2010, 1, pp. 427 – 439.
55. Environmental life cycle assessment of alternative fuels for city buses : A case study in Oujda city, Morocco (2021) International Journal of Hydrogen Energy, 46 (49), pp. 25308 – 25319
56. The Grooved Lip Effect on Reciprocating Hydraulic Rod Seal Performances in Transient Condition : Elastohydrodynamic Lubrication (2020) International Journal of Applied Mechanics and Engineering, 25 (2), pp. 11 – 21
57. A Mössbauer study of bcc stainless steel films (1995) Nuclear Inst. and Methods in Physics Research, B, 101 (3), pp. 267-269,272-274.
58. Dynamics and shape control of vibrating composite plate containing piezoelectric laminas. Design of an intelligent structural antifouling system (2004) Ferroelectrics, 304, pp. 55 – 59.
59. Nucleate pool boiling of liquid nitrogen on a brass ribbon with different positions (2017) International Journal of Mechanical and Mechatronics Engineering, 17 (5), pp. 101 – 108.
60. New thin piezoelectric plate models (1998) Journal of Intelligent Material Systems and Structures, 9 (12), pp. 1017 – 1029.
61. A new experimental strategy assessing the optimal thermo-mechanical properties of plaster composites containing Alfa fibers (2022) Energy and Buildings, 262, art. no. 111984.
62. New mathematical approach vibration active control by intelligent materials (1996) Proceedings - International Symposium on Electrets, pp. 984 – 989.
63. Centrifugal and thermal influence on the dispersion of surface waves propagating on a thermopiezoelectric half-space (2016) International Journal of Mechanical and Mechatronics Engineering, 16 (2), pp. 70 – 78.
64. Application of mechanical waves induced by piezofilms to marine fouling protection of oceanographic sensors (1995) Smart Materials and Structures, 4 (3), art. no. 006, pp. 195 – 201.
65. Thermal performance assessment of double hollow brick walls filled with hemp concrete insulation material through computational fluid dynamics analysis and dynamic thermal simulations (2023) e-Prime - Advances in Electrical Engineering, Electronics and Energy, 3, art. no. 100124.

66. Assessment of Impacts from the Transition to Electric Mobility in Morocco (2020) 2020 13th International Colloquium of Logistics and Supply Chain Management, LOGISTIQUA 2020, art. no. 9353908.
67. Grid-connected PV systems installed on institutional buildings : Technology comparison, energy analysis and economic performance (2016) Energy and Buildings, 130, pp. 188 – 201.
68. Evaluation of the potential impact of electric vehicles in Morocco : A literature review (2022) 2022 IEEE 14th International Conference of Logistics and Supply Chain Management, LOGISTIQUA 2022.
69. Finite element model of vibration control for an exponential functionally graded Timoshenko beam with distributed piezoelectric sensor/actuator (2019) Actuators, 8 (1), art. no. 19
70. Nonlinear vibrations of large structures with uncertain parameters (2017) Advances in Mechanical Engineering, 9 (7)
71. Assessment of road transport in Morocco in energetic terms using the DMAIC approach (2020) Proceedings - 2020 5th International Conference on Logistics Operations Management, GOL 2020, art. no. 9314730