**Faculté/Institut : Des Sciences et de la Technologie**

**Département : Electronique**

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| 1. **Identification du laboratoire/Unité de recherche** | | | |  |
| Modélisation des dispositifs a énergies renouvelables et nanométriques | | | | إسم المخبر |
| Intitulé du Laboratoire | Modélisation des dispositifs a énergies renouvelables et nanométriques | | | |
| Acronyme du labo | - **MoDERNa** | | | |
| Adresse électronique | [contact@moderna-umc.com](mailto:contact@moderna-umc.com) | | | |
| Site web ou URL | <http://www.moderna-umc.com> | | | |
| Année d’Agrément : | 2011 | Tel : 03181 89 66 / 0554973915 | Fax : 03181 89 66 | |

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| 1. **Directeur du laboratoire/Unité de recherche** | | | |
| Nom & Prénom | KERROUR Fouad | | Grade : MCA |
| Adresse Electronique | [f\_kerrour@moderna-umc.com](mailto:f.kerrour@moderna-umc.com) | | |
| Nombre Equipes : | 4 | Nbre Chercheurs: 45 | Nbre Personnel soutien: 00 |

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| 1. **Présentation du laboratoire** |
| ***Thèmes mis en œuvres :***   1. *L’équipe de Simulation et modélisation de dispositif électronique est* Constitué de deux axes recherches:   **Axe 1 -Systèmes à EnR et composant nanométrique (capteur Hybride, MESFET, HEMT, CNTFET, etc…)**  **Axe 2- Capteur de pression pour diverses applications (MEMS, NEMS, etc…)**   1. ***L’équipe intitulée :*** Conception, Elaboration et Simulation de Couches Minces Nanométriques pour les Cellules PV travail sur les axes suivants : ***…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………..……………………………………………………………………………………………………………………….……………………………………………………………………………………………………………………………………………….*** 2. ***L’ équipe 3 intitulée :*** Systèmes PV, du dispositif à l’application ***travail sur les thèmes suivants :***      1. ***L’ équipe 4 intitulée :*** Système à EnR: Etude de la charge, travail sur les thèmes suivants : 2. Modélisation de la cellule PV, du générateur et étude de la caractéristiques I-V et P-V. 3. Etude, modélisation et optimisation de l’étage d’adaptation entre la source et la charge 4. Etude de la charge et connexion au réseau. |
| ***Mots-Clés :* capteur Hybride, MESFET, HEMT, CNTFET, MEMS, NEMS, mppt, convertisseur, batterie, PV, éolien, charge** |

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| 1. **Chefs d’équipes** | | |
| .Titre de l’Equipe1 | *Simulation et modélisation de dispositif électronique:*  **Axe 1 -Systèmes à EnR et composant nanométrique**  **Axe 2- Capteur de pression pour diverses applications** | |
| Nom-Chef d’équipe[[1]](#footnote-1) | **KERROUR FOUAD** | Grade : MCA |
| Titre de l’Equipe2 | Conception, Elaboration et Simulation de Couches Minces Nanométriques pour les Cellules PV | |
| Nom-Chef d’équipe[[2]](#footnote-2) | **BOUKEZZATA Messaoud** | Grade : Pr. |
| Titre de l’Equipe3 | Systèmes PV, du dispositif à l’application | |
| Nom-Chef d’équipe[[3]](#footnote-3) | **HAOUAM Abdessalem** | Grade : MCA |
| Titre de l’Equipe4 | Système à EnR: Etude de la charge | |
| Nom-Chef d’équipe4 | **CHENNI Rachid** | Grade : Pr. |
| 1. **Liste des publications:** 2. Mouatsi. A, Marir-Benabbas. M, «Modeling of sub-band and diameter effect in carrier concentration of CNTFET », Materials Science in Semiconductor Processing, Vol 28, pp15-120, December 2014, DOI: 10.1016/j.mssp.2014.07.033. 3. **Mouatsi. A,** M.Marir-Benabbas, « Band structure of CNT effect on the CNTFET performances  *International journal of nanotechnology and application (IJNA),* vol.3, Issue 2, pp 9-14, 2013- ICID: 1046544. ISSN 2277-4777 4. Marir Benabbas, **I. Bouneb**, « Nanometric modelisation of gas structure, a Multidimensional quantum well. » , *international journal of electrical and electronics engineering (IJEEE) »,Vol-3,Iss-1, pp 41-56, 2013* *IF:0.8 ISSN(PRINT) 2231-5284* 5. I .Bouneb, .M .Marir Benabbas, N.Raveu, H.Baudrand, « Influence of different technological parameters on the accumulation barrier of nanostructure AlGaAs/GaAs», International Review of PHYSICS - April 2011 (Vol. 5 N. 2), pp. 60-63- ISSN: 1971-680X- e-ISSN: 1971-6796. 6. I.BOUNEB and F.KERROUR, «Nanometric Modelisation to characterize dynamics carriers in a HEMT heterostructure(ALGaAs/GaAs) using an effectif doping», *Key Engineering Materials Vol. 644 (2015) pp 26-30 © (2015) Trans Tech Publications, Switzerland doi:10.4028/* 7. I.BOUNEB and F.KERROUR, « A new expression of Ns versus Ef to an accurate control charge model for AlGaAs/GaAs  »,IOP Conference Series: Materials Science and Engineering, 108 (2016) 012045 8. **H.Ben Cheikh el Hocine**, M.Marir- Benabbas, « Study of Electrical and Thermal Performance of a Hybrid PVT Collector», International Journal of Electrical and Electronics Engineering Research (IJEEER), ISSN 2250-155X, Vol. 3, Issue 4, Oct 2013, pp 95-106. 9. **H.Ben Cheikh el Hocine**, M.Marir- Benabbas, «Influence of internal and external parameters in temperature of hybrid PV/T water collector », Journal of Energy and Power Engineering, USA, ISSN 1934-8975, Volume 7, Nov. 2013 10. **H.Ben Cheikh el Hocine**, M.Marir- Benabbas, «Study of various configuration of hybrid PVT system with dual heat extraction operation», International Journal of Engineering and Innovative Technology (IJEIT), ISSN 2277-3754, Volume 3, Issue 3, September 2013. 11. ben cheikh el hocine hanene, Touafek Khaled, Kerrour Fouad, Khelifa Abdelkrim, Tabet Ismail, Haloui Hafsia «A Three-Dimensional Modeling of Photovoltaic Thermal Collector», International Journal of Renewable Energy Research-IJRER,  [Vol 6, No 2 (2016)](http://www.ijrer.org/ijrer/index.php/ijrer/issue/view/4785074604081174" \t "_parent), pp 384-391 Online ISSN: 1309-0127. 12. [H. Ben cheikh el hocine](http://www.sciencedirect.com/science/article/pii/S1876610215015179) , [K. Touafek](http://www.sciencedirect.com/science/article/pii/S1876610215015179) , [F. Kerrour](http://www.sciencedirect.com/science/article/pii/S1876610215015179), [H. Haloui](http://www.sciencedirect.com/science/article/pii/S1876610215015179), [A. Khelifa](http://www.sciencedirect.com/science/article/pii/S1876610215015179)  , « Model Validation of an Empirical Photovoltaic Thermal (PV/T) Collector  », Energy Procedia 74 (2015) pp 1090–1099, [doi:10.1016/j.egypro.2015.07.749](http://dx.doi.org/10.1016/j.egypro.2015.07.749) 13. A.BEDDIAF, F.KERROUR ans S. KEMOUCHE, « The Effect of Temperature and Doping Level on the characteristics of Piezoresistive Pressure Sensor», Journal of Sensor Technology, 2014, 4, 59-65 Published Online June 2014 in SciRes. 14. A.BEDDIAF, F.KERROUR ans S. 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Fouad Kerrour et al «Modeling of thermal behavior of N-doped silicon resistor», ***Journal of Sensor Technology*, 2012, 2, pp 132-137** doi:10.4236/jst.2012.23019 Published Online September 2012. 19. K. Aouni, F. Kerrour, « Dynamic Analysis of Quantum Well Laser», Proceedings of 2015 IEEE International Renewable and Sustainable Energy Conference, IRSEC 2015, Pages: 1-3,Mars2016, DOI: [10.1109/IRSEC.2015.7455073](http://dx.doi.org/10.1109/IRSEC.2015.7455073) 20. H. Ben cheikh el hocine\*, K.Touafek\*\*, F.Kerrour\*\*\*, A. Khelifa\*\*\*\*, I. Tabet\*\*\*\*\*, H, Haloui, « A Three-Dimensional Modeling of Photovoltaic Thermal Collector», Vol.6, No.2, 2016, ISSN: 1309-0127   **--------------------------------------------------------------------------------------------------------------------------------------------**  **R. Chenni**, L. Zarour, A. Bouzid and T. 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Chenni**, L. Zarour, E. Matagne & T. Kerbache  **Optimisation d’un système de pompage photovoltaïque**  Revue Sciences et Technologies B – N° 26, décembre 2007.  **R. Chenni**, L. Zarour, M. Amarouayache & A. Bouzid  **A new design of analogue maximum power point tracker**  International Review of Electrical Engineering, Vol 2, February 2008.  L. Zarour, **R. Chenni**, A. Borni & A. Bouzid  **Improvement of synchronous and asynchronous motor drive systems supplied by photovoltaic arrays with frequency control.**  Journal of electrical engineering, JEEEC, Vol. 59, N° 4, pp 169-177. August 2008.  **R. Chenni**, E. Matagne & M.Khennane  **Study of solar radiation in view of photovoltaic systems optimization**  International journal: Smart grid and renewable energy, SGRE, Vol. 2, 367-374, 2011.  A. Borni, L. 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ISSN 2229-5518 IJSER © 2014 <http://www.ijser.org>.  [Nouar Aoun](http://www.scirp.org/journal/articles.aspx?searchCode=Nouar+Aoun&searchField=authors&page=1), **[Rachid Chenni](http://www.scirp.org/journal/articles.aspx?searchCode=Rachid+Chenni&searchField=authors&page=1" \t "_blank)**, [Boukheit Nahman](http://www.scirp.org/journal/articles.aspx?searchCode=Boukheit+Nahman&searchField=authors&page=1" \t "_blank), [Kada Bouchouicha](http://www.scirp.org/journal/articles.aspx?searchCode=Kada+Bouchouicha&searchField=authors&page=1" \t "_blank)  [**Evaluation and Validation of Equivalent Five-Parameter Model Performance for Photovoltaic Panels Using Only Reference Data**](http://www.scirp.org/journal/PaperInformation.aspx?PaperID=49560)  [**Energy and Power Engineering**](http://www.scirp.org/journal/Home.aspx?JournalID=93) [Vol.6 No.9](http://www.scirp.org/journal/Home.aspx?IssueID=5377), September 10, 2014, pp 235-245. (ISSN: 1947-3818).  DOI: [10.4236/epe.2014.69021](http://dx.doi.org/10.4236/epe.2014.69021)  N. Aoun, B. Nahman, **R. Chenni** and K. Bouchouicha,  **A Detailed Modeling of a Five Parameters Model for Photovoltaic Modules**  International Journal of Modern Engineering Research, Vol. 4, pp. 54-59, 2014, (ISSN: 2249-6645).  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Boudjema Mehimmedetsi and **Rachid Chenni**  **Modelling of DC PV system with MPPT.**  [Proceedings of the 3rd International Renewable and Sustainable Energy Conference (IRSEC)](http://ieeexplore.ieee.org.www.sndl1.arn.dz/xpl/mostRecentIssue.jsp?punumber=7449555)  Year: 2015, Pages: 1 - 6,  DOI: [10.1109/IRSEC.2015.7455013](http://dx.doi.org.www.sndl1.arn.dz/10.1109/IRSEC.2015.7455013)  [Abdelkrim Rachid](http://ieeexplore.ieee.org.www.sndl1.arn.dz/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.A.%20Rachid.QT.&newsearch=true), [Foued Kerrour](http://ieeexplore.ieee.org.www.sndl1.arn.dz/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.F.%20Kerrour.QT.&newsearch=true), [**Rachid Chenni**](http://ieeexplore.ieee.org.www.sndl1.arn.dz/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.R.%20Chenni.QT.&newsearch=true) and [Hind Djeghloud](http://ieeexplore.ieee.org.www.sndl1.arn.dz/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.H.%20Djeghloud.QT.&newsearch=true) [PV emulator based buck converter using dSPACE controller](http://ieeexplore.ieee.org.www.sndl1.arn.dz/document/7555762/) Proceedings of [IEEE 16th International Conference on Environment and Electrical Engineering (EEEIC)](http://ieeexplore.ieee.org.www.sndl1.arn.dz/xpl/mostRecentIssue.jsp?punumber=7547194)  Year: 2016, Pages: 1 - 6,  DOI: [10.1109/EEEIC.2016.7555762](http://dx.doi.org.www.sndl1.arn.dz/10.1109/EEEIC.2016.7555762).  Yahia Bouzelata, Necmi Altın, **Rachid Chenni** & Erol Kurt  **Exploration of optimal design and performance of a hybrid wind-solar energy system.**  International journal of hydrogen energy, Volume 41, issue 29 Elsevier (3 August 2016) 12497–12551  <http://dx.doi.org/10.1016/j.ijhydene.2015.12.165>  Boutheina Madaci, **Rachid Chenni**, Erol Kurt and kamal Eddine Hemsas.  **Design and control of stand-alone hybrid power system**  International journal of hydrogen energy, Volume 41, issue 29 Elsevier (3 August 2016) 12485–12496  <http://dx.doi.org/10.1016/j.ijhydene.2016.01.117> | | |

1. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)
3. [↑](#footnote-ref-3)