

Faculté/Institut : Des Sciences et de la Technologie

Département : Electronique

1- Identification du laboratoire/Unité de recherche		
Modélisation des dispositifs a énergies renouvelables et nanométriques		اسم المخبر
Intitulé du Laboratoire	Modélisation des dispositifs a énergies renouvelables et nanométriques	
Acronyme du labo	- MoDERNa	
Adresse électronique	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

2- Directeur du laboratoire/Unité de recherche		
Nom & Prénom	KERROUR Fouad	Grade : MCA
Adresse Electronique	f_kerrou@moderna-umc.com	
Nombre Equipes :	4	Nbre Chercheurs: 45 Nbre Personnel soutien: 00

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

4- Chefs d'équipes

Titre de l'Equipe1	<i>Simulation et modélisation de dispositif électronique:</i> Axe 1 -Systèmes à EnR et composant nanométrique Axe 2- Capteur de pression pour diverses applications	
Nom-Chef d'équipe 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	BOUKEZZATA Messaoud	Grade : Pr.
Titre de l'Equipe3	Systèmes PV, du dispositif à l'application	
Nom-Chef d'équipe ³	HAOUAM Abdessalem	Grade : MCA
Titre de l'Equipe4	Système à EnR: Etude de la charge	
Nom-Chef d'équipe ⁴	CHENNI Rachid	Grade : Pr.

5- Liste des publications:

- 1- 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.
- 2- **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
- 3- Marir Benabbas, **I. Bouneb**, « Nanometric modelisation of gas structure, a 2Multidimensional quantum well. » , *international journal of electrical and electronics engineering (IJEER)* », Vol-3, Iss-1, pp 41-56, 2013 IF:0.8 ISSN(PRINT) 2231-5284
- 4- 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.
- 5- 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/*
- 6- I.BOUNEB and F.KERROUR, « A new expression of N_s versus E_f to an accurate control charge model for AlGaAs/GaAs », *IOP Conference Series: Materials Science and Engineering*, 108 (2016) 012045
- 7- **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 (IJEER)*, ISSN 2250-155X, Vol. 3, Issue 4, Oct 2013, pp 95-106.
- 8- **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
- 9- **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.

- 10- ben cheikh el hocine hanene, Touafek Khaled, Kerrou F 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), pp 384-391 Online ISSN: 1309-0127.
- 11- H. Ben cheikh el hocine , K. Touafek , F. Kerrou, H. Haloui, A. Khelifa , « 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
- 12- 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.
- 13- A.BEDDIAF, F.KERROUR ans S. KEMOUCHE, « Thermo mechanical modelling of Piezoresistive pressure sensor”, International Review on Modelling and Simulations (IREMOS) Vol 7 n°3 pp 517-522 august 2014, Paper ID: 15461.
- 14- F.KERROUR, S. KEMOUCHE ans A.BEDDIAF, « Performance Optimization of a Capacitive Pressure Sensor », Key Engineering Materials Vol. 644 (2015) pp 101-105 © (2015) Trans Tech Publications, Switzerland DOI: 10.402.
- 15- A. Beddiaf, F. Kerrou, S. Kemouche, «Thermal drift characteristics of capacitive pressure sensors», Journal of Engineering Science & Technology. (JESTEC). Volume 11, Issue 6 (June 2016).
- 16- Abdelaziz Beddiaf, Fouad Kerrou, Salah Kemouche, «A Numerical Model of Joule Heating in Piezoresistive Pressure Sensors», **International Journal of Electrical and Computer Engineering (IJECE)**, Vol. 6, No. 3, June 2016, pp. 1223 ~ 1232, ISSN: 2088-8708,
- 17- Fouad Kerrou 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.
- 18- K. Aouni, F. Kerrou, « Dynamic Analysis of Quantum Well Laser», Proceedings of 2015 IEEE International Renewable and Sustainable Energy Conference, IRSEC 2015, Pages: 1-3, Mars 2016, DOI: [10.1109/IRSEC.2015.7455073](https://doi.org/10.1109/IRSEC.2015.7455073)
- 19- H. Ben cheikh el hocine*, K.Touafek**, F.Kerrou***, A. Khelifa****, I. Tabet*****, H, Haloui, « A Three-Dimensional Modeling of Photovoltaic Thermal Collector», Vol.6, No.2, 2016, ISSN: 1309-0127

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I. Zeghib, **R. Chenni** & T. Kerbache

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R. Chenni, L. Zarour, E. Matagne & T. Kerbache

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Revue Sciences et Technologies B – N° 26, décembre 2007.

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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. Zarour and **R. Chenni**

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R. Merahi et **R. Chenni**

Amélioration de la commande P&O par une détection synchrone du courant de batterie.

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Y. Bouzelata, H . Djeghloud and **R. Chenni**

The Application of an Active Power Filter on a Photovoltaic Power Generation System

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B. Mehimmedetsi & **R. Chenni**

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Boudjema Mehimmedetsi and **Rachid Chenni**
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Proceedings of the 3rd International Renewable and Sustainable Energy Conference (IRSEC)
Year: 2015, Pages: 1 - 6,
DOI: 10.1109/IRSEC.2015.7455013

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Proceedings of IEEE 16th International Conference on Environment and Electrical Engineering (EEEIC)
Year: 2016, Pages: 1 - 6,
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Yahia Bouzelata, Necmi Altın, **Rachid Chenni** & Erol Kurt
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