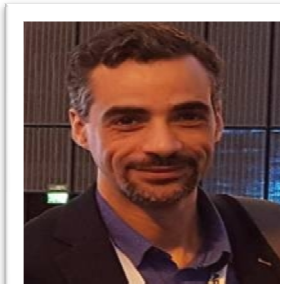
Prof. Fayçal DJEFFAL
Micro/Nanoelectronics and Semiconducting materials and devices

I. Address:
Department of Electronics
Faculty of Technology
University of Batna-2
Batna, 05000, ALGERIA
E-mails:
faycal.djeffal@univ-batna2.dz/ faycaldzdz@hotmail.com
Tel. (Mobile):00213560859038
00213773796503



II. Education and Academic Degrees

1993-1998	• Engineer degrees in Electronics (with first class honor), University of Batna, Batna, Algeria.
1998-2001	• M.Sc. degrees in Microelectronics (with first class honor), University of Batna, Batna, Algeria.
2002-2006	• Ph.D degrees in Microelectronics, University of Batna, Batna, Algeria.
2006-2007	• Habilitation (HDR) degrees in Micro and Nanoelectronics, University of Batna, Batna, Algeria.

III. Professional Background

2000-2002	• Ass. Lecturer (Partial Time).
2002-2006	• Ass. Professor B, University of Batna, Batna, Algeria.
2006-2007	• Ass. Professor A, University of Batna, Batna, Algeria.
2007-2012	• Assoc. Professor, University of Batna, Batna, Algeria.
2012-present	• Professor, University of Batna-2, Batna, Algeria.

IV. Awards and memberships:

1. National –ANDRU- Award for best scientific publications (2007), Algeria.
2. Member of European Materials Research Society (E-MRS),2007, France.
3. National –CDER- Award for best scientific publications (2008), Algeria.
4. Microsoft-TWAS-AAS Award (2010), Italy.
5. MADICA'2010, Best paper Award, October 20-22, Tabarka (2010), Tunisia.
6. Shoman Award for Arab Researchers - Engineering Sciences- (2011), Jordan.
7. Marquis's who's who in Sciences and Engineering 2011-2012, USA.
8. Senior Member of IEEE (IEEE-SM), 2013, USA.
9. Senior member of IACSIT, 2013, Singapore.
10. TWAS-Young Fellow (World Academy of Sciences), 2013, Italy.
11. World Congress of Engineering (WCE'2013), Certificate of Merit for Best paper, London (2013), UK.
12. Member of Arab-German Academy of Sciences and Humanities (AGYA), 2013, Berlin, Germany.
13. Fellow of the African Academy of Sciences (AAS), 2014, Nairobi, Kenya.
14. World Congress of Engineering (WCE'2014), Certificate of Merit for Best paper, London (2014), UK.
15. World Congress of Engineering (WCE'2015), Best paper Award, London (2015), UK.
16. National -ANASR- Award for best scientific paper in Physical sciences and Mathematics (2017), Algeria.
17. Young African researchers award-2019, Cairo, Egypt.

18. Member of National Commission of Universities (CUN), 2021.
19. Member of The World Academy of Sciences (TWAS), 2023.

V. Main Field of Interest:

- Micro/nanoelectronics; Optoelectronics; Renewable Energy; photovoltaic; Soft-Computing/artificial intelligence.

1. **Artificial Intelligence and Soft-Computing**
    - Machine Learning
    - Evolutionary Techniques (Genetic Algorithms GAs, Particle Swarm Optimization PSO, multi-objective process,…).
    - Fuzzy Logic.
    - Neural Space Mapping approaches
    - Multi-Objectives Optimization techniques.
2. **Micro/nanoelectronics and Optoelectronics**
    - Soft-computing-based approaches to study microelectronic devices for energy and environmental sensing applications (Power devices, sensors, solar cells….).
    - Metamaterial for optoelectronic and photovoltaic applications (sensors, solar cells, .).
    - Environmental sensing.
    - Graphene-based sensors for environmental sensing and energy applications.
    - Fabrication and characterization of microelectronic devices (RF sputtering, PVD, XRD, UV-Vis, ...).

VI. Engineering, Master and doctoral theses supervision:

1. Supervision of 32 Masters and 12 PhD theses.
2. Member in several M.sc. and Ph.D. theses supervisory committees.

VII. Research Projects:

- Head of project “Contribution to the development of nanoelectronics circuit Simulator using Soft-Computing-based techniques” Algerian project (CNEPRU), 2009-2011.
- Member of project “Elaboration of power converters for electrical system applications” Algerian project (CNEPRU), 2006-2009.
- Member of Project“ Nouvelles Approches à l’étude des systèmes nanoélectroniques: Application à la conception des dispositifs intégrés nanométriques”, Algerian project (PNR), 2011-2013.
- Head of project “ Etude, Modélisation et élaboration des cellules solaires hétérostructures à base SiGe ” Algerian project (PNR-NOUR21), 2015-2017.
- Head of project “ Study, Optimization and elaboration of low cost optoelectronic and photovoltaic devices ” Algerian project (PRFU), 2019-2022.
- Head of project “New approaches based on artificial intelligence to elaborate high-performance microelectronics devices ” Algerian project (PRFU), 2023-2027.

VIII. Reviewer and Editorial Activities

- Associate Editor for Indonesian Journal of Electrical Engineering (IJEE) http://telkomnika.ee.uad.ac.id. (Since 2010).

I have reviewed several articles in following International journals and conferences, such as:

- Journal of Soft-Computing: (Publisher: Elsevier),(Since 2010).
- Applied mathematical modelling (Publisher: Elsevier),(Since 2009).
- Journal of IET circuits, devices and systems (Publisher: IET),(Since 2008)
- Journal of Applied Physics: Condensed Matter (Publisher: IOP),(Since 2007).
- Journal of Semiconductor Sciences and Technology (Publisher: IOP), (Since 2007).
- Journal of Nanotechnology (Publisher: IOP),(Since 2007).
- Journal of Physics D: Applied Physics (Publisher: IOP),(Since 2008).
- Journal of Materials Sciences and Eng-B (Publisher: Elsevier),(Since 2007).
- Journal of microelectronics (Publisher: Elsevier),(Since 2009).
- International Journal of Electronics ((Publisher: Taylor and Francis),(Since 2008).

- IEEE Trans Electron Devices (Publisher: IEEE),(Since 2009).
- Journal Measurement Science and Technology (Publisher: IOP),(Since 2011).
- Journal of Superlattices and Microstructures (Publisher: Elsevier),(Since 2010).
- Journal of Journal of Alloys and Compounds (Publisher: Elsevier), (Since 2020).
- IETE Technical Review; (Since 2011).
- IEEE sensors; (Since 2018).
- Journal of computational electronics (Publisher: Springer); (Since 2018)
- 2013 IEEE Congress on Evolutionary Computation, June 20-23, 2013, Cancun, Mexico.
- 2014 IEEE Congress on Evolutionary Computation, July09-11, 2014, China.
- 2015 IEEE Congress on Evolutionary Computation, May08-10, 2015, Japan.
- IEEE- STA'14-21, Tunisia, 2014-2021.
- IEEE- ICSC'15, April 28-30, Sousse, Tunisia, 2015.
- WCE-2017, July 03-05, London, UK, 2017.

Language Skills: Good spoken and written both French and English as foreign languages.

X. Publications list:

- Citations Index, WoS, (h-index): 33.
https://www.webofscience.com/wos/author/record/AAO-7986-2020
- Citations Index, Google scholar, (h-index): 39.
https://scholar.google.com/citations?hl=fr&user=e6DPr20AAAAJ
- Citations Index, Scopus, (h-index): 36.
https://www.scopus.com/authid/detail.uri?authorId=6504705230

1.Published books:

[B.1] **F. Djeffal** and N. Lakhdar, Multigate (III-V) FET-based devices for high performance applications,**English Edition,**LAP LAMBERT Academic Publishing - ISBN-13: 978-3-659-33333-0, 2012, Germany. 132 pages (www.morebooks.de).

[B.2] **F. Djeffal** and T. Bendib, Evolutionary and neural techniques: Application to Microelectronics circuits, **French Edition**, ISBN: 978-9947-0-2486-7, 2008, Batna, Algeria. 138 pages.

[B.3] **F. Djeffal** and M.A. Abdi, Courses and Exercises in Electronics, **Arabic Edition**, ISBN: 978-9961-9654-8-1, 2008, Batna, Algeria. 110 pages.

[B.4] **F. Djeffal**, Predictive modeling of deep submicron MOSFET: Application to nanoscale devices design, **French Edition**, Publishing European University, ISBN: 978-613-1-52913-9, 2010, Sarrebruck, Germany. 164 pages (www.amazon.com).

[B.5] **F. Djeffal** and T. Bendib, Nanoscale MOSFETs, **French Edition**, Publishing European University, ISBN: 978-6131552021, 2010, Sarrebruck, Germany. 88 pages (www.amazon.com).

[B.6] **F. Djeffal** and N. Lakhdar, Modeling of Electron mobility in Semiconductor devices, **French Edition**, Publishing European university, ISBN: 978- 6131551390, 2010, Sarrebruck, Germany. 100 pages (www.amazon.com).

[B.7] M. Meguellati, **F. Djeffal**, Multigate FET-based sensors for Engineering applications, **English Edition,** LAP LAMBERT Academic Publishing - ISBN-13: 978-3-8465-4597-3, 2012, Germany. 101 pages (www.morebooks.de).

3. Published chapters-book

[CB.1] H. Ferhati, **F. Djeffal**, T. Berghout, "New approaches for modeling of nanoscale Junctionless FETs: device and circuit Level performance assessment", 21st Chapter in the book 'Circuit Design for Modern Applications' (ISBN 978-1-032-77431-2), CRC Press, Taylor and Francis, 2025.

[CB.2] A. Maoucha, F. Djeffal, H. Ferhati "New Approaches for Developing Efficient Eco-Friendly Lead-Free Perovskite Thin-Film Solar Cells: Modeling and Design Methodology," 7th Chapter in the book NanoRevolution: Unveiling the Future of Energy through Advanced Materials and Digital Technologies' (ISBN 9781032814100), CRC Press, Taylor and Francis, 2025.

[CB.3] N. Abdelmalek, **F. Djeffal,** T. Bentrcia, " Investigation of Hot Carrier–induced Degradation in Nanoscale Junctionless MOSFETs : A Reliability-based Analysis", Chapter.4 in the book:

Nanotechnology in Electronics: Materials, Properties, Devices, ISBN: 9783527824229, publisher Wiley-VCH GmbH, 2023.

[CB.4] T. Bentrcia, **F. Djeffal** and E. Chebaki, "Multi-objective Design of Nanoscale Double Gate MOSFET Devices Using Surrogate Modeling and Global Optimization", Intelligent Nanomaterials, 2nd Edition, ISBN: 978-1-119-24248-2, Edited: Ashutosh Tiwari, publisher: Wiley, pp. 395-427, 2016.

[CB.5] **F.Djeffal**, A. Benhaya, K. Tamersit, and M. Meguellati, "New dielectric modulated graphene (DMG) FET-based sensorfor High-performance biomedical sensing applications," IAENG Transactions on Engineering Sciences: DOI: 10.1142/9789814667364_0030, ISBN: 978-981-4667-35-7, World Scientific Publishing, Edited by: Sio-Iong Ao, Alan Hoi-Shou Chan, Hideki Katagiri, Li Xu, Hong Kong, pp. 401-414, 2015.

[CB.6] T. Bendib,L. Pancheri, **F.Djeffal** and G-F. Dalla Betta, "Modeling and optimization of avalanche photodiode electrical parameters using multiobjective genetic algorithm," IAENG Transactions on Engineering Sciences: DOI: 10.1142/9789814667364_0031, ISBN: 978-981-4667-35-7, World Scientific Publishing,Edited by: Sio-Iong Ao, Alan Hoi-Shou Chan, Hideki Katagiri, Li Xu, Hong Kong, pp. 415-429, 2015.

[CB.7] **F.Djeffal** and T. Bendib, Artificial-Neural-Networks-Based Approaches tostudy the Nanoscale CMOS Devices, Book title: Artificial Neural networks, Editor: Seoyun J. Kwon, Publisher: Nova Science Publishers, ISBN: 978-1-61761-553-5, 2010, pp. 109-122,New York, USA.

[CB.8] T. Bentrcia and **F.Djeffal**, Compact Modeling of Multi-Gate MOSFET including Hot-Carrier Effects, Book title: CMOS Technology,Editor: Min-jun Kwon, Publisher: Nova Science Publishers,ISBN: 978-1-61761-325-8, 2010, pp.135-158, New York, USA.

[CB.9] F. Djeffal and M. Meguellati, "multigate RADFET dosimeter For Radioactive Environment Monitoring Applications", series title: lecture notes in electrical engineering, Editors names: Gi-Chul Yang, SIO-IONG AO. Len Gelman, Title of Book: IAENG Transactions on Engineering Technologies, GPU/PS: 3/9059, SPIN: GT-C-CTP-09/2012, Vol. 229, 2013, pp 301-313, Springer, Netherlands.

[CB.10] T. Bendib and **F. Djeffal**, "Multi-objective-based approach to optimize the Analog Electrical behavior of GSDG MOSFET: application to nanoscale circuit design", series title: lecture notes in electrical engineering, Editors names: Gi-Chul Yang, SIO-IONG AO. Len Gelman, Title of Book: IAENG Transactions on Engineering Technologies, GPU/PS: 3/9059, SPIN: GT-C-CTP-09/2012, Vol. 229, 2013, pp 315-325, Springer, Netherlands.

[CB.11] T. Bentrcia and **F. Djeffal**, "An ANFIS based approach for prediction of threshold voltage degradation in nanoscale DG MOSFET devices" Editors names: Gi-Chul Yang, Sio-Iong Ao, Len Gelman, Book Title: IAENG Transactions on Engineering Technologies, DOI: 10.1007/978-94-017-8832-8_25,ISBN: 978-94-017-8831-1, pp 339-353, 2014, Springer, Netherlands.

3. Published papers in Referred Journals

[J.1] Maoucha, A., Berghout, T., & Djeffal, F. (2025). Machine and deep Learning-Powered analysis of photovoltaic properties in 4-terminal FASnI3/CIGS tandem solar cells. Materials Science and Engineering: B, 322, 118629.

[J.2] Dibi, K., Ferhati, H., Dibi, Z., & Djeffal, F. (2025). A Novel Highly-Sensitive pH Sensor Based on Tunneling FET Platform with SiSn-Si-Si Hetero-Channel. Sensing and Imaging, 26(1), 1-17.

[J.3] Maoucha, A., Berghout, T., Djeffal, F., & Ferhati, H. (2025). Deep Learning–Driven Design of Eco-friendly $CZTS_xSe_{1-x}$ Solar Cells: Impact of Plasmonic Light Trapping and Bandgap Tuning. Plasmonics, 1-16.

[J.4] Ferhati, H., Djeffal, F., Martin, N., & Benhaya, A. (2025). Novel Tunable Conductive Type SnOx Thin-Film Phototransistor with High Multiband Sensitivity: Effects of Pulsing Process and Au Nanoplasmons. Plasmonics, 1-11.

[J.5] Ouchen, R., Berghout, T., Djeffal, F., & Ferhati, H. (2025). Machine Learning-Guided Design of 10 nm Junctionless Gate-All-Around Metal Oxide Semiconductor Field Effect Transistors for Nanoscaled Digital Circuits. physica status solidi (a), 222(6), 2400670.

[J.6] Maoucha, A., Berghout, T., Djeffal, F., & Ferhati, H. (2025). Machine learning-assisted analysis of lead-free FACsSnI3 solar cell degradation: Deep learning classification and design parameter importance assessment. Inorganic Chemistry Communications, 114114.

[J.7] Ferhati, H., Kacha, K., & Djeffal, F. (2025). Efficient ACZTS solar cells using optimized ZnO/metal/ZnO buffer multilayer: A combined FDTD-PSO approach. Solid State Communications, 115842.
[J.8] Djeffal, F., Rahmani, I., & Ferhati, H. (2024). Performance Assessment of a New Opto-ferroelectric-JL-FET IR Phototransistor: Impact of Negative Capacitance and Nanoparticle Plasmonics. Plasmonics, 1-11.
[J.9] Ferhati, H., & Djeffal, F. (2025). An efficient multispectral CsSnI3 MSM photodetector using back grooves and light trapping optimization: FDTD-GA calculations. Journal of Computational Electronics, 24(1).
[J.10] Rahmani, I., Dibi, Z., Farhati, H., & Djeffal, F. (2025). Novel junctionless GAA negative capacitance FET based on gate engineering aspects: analytical modeling and performance assessment. Journal of Computational Electronics, 24(1), 1-14.
[J.11] Maoucha, A., Berghout, T., Djeffal, F., & Ferhati, H. (2025). Machine learning-guided analysis of CIGS solar cell efficiency: Deep learning classification and feature importance evaluation. Solar Energy, 287, 113251.
[J.12] Maoucha, A., Berghout, T., Djeffal, F., & Ferhati, H. (2025). Machine learning-assisted investigation of CIGS thin-film solar cell degradation using deep learning analysis. Journal of Physics and Chemistry of Solids, 199, 112526.
[J.13] Ferhati, H., Djeffal, F., Martin, N., & Benhaya, A. (2024). Tunable properties of SnOx sputter-deposited by RGPP and GLAD techniques: A potential candidate for photosensing and all-oxide solar cells. Solar Energy, 268, 112305.
[J.14] Kasbaoui, C., Ramadan, F. Z., Drissi, L. B., Abdel-Hafiez, M., & Djeffal, F. (2024). Engineering the electromagnetic response and thermoelectric performance of half-functionalized stanene with H, F, Cl, Br and I. Materials Science and Engineering: B, 300, 117106.
[J.15] Ferhati, H., Berghout, T., & Djeffal, F. (2024). Efficient SnS Solar Cells via Plasmonic Light Trapping and Alternative Buffer Layers: A Combined Machine Learning and FDTD Analysis. Plasmonics, 1-11.
[J.16] Ferhati, H., Martin, N., & Djeffal, F. (2024). Boosting the Efficiency of SnS Solar Cells Through Reactively Sputter-Deposited Ag-Nanostructured Layer/SnO2 Film at Glancing Angles. Plasmonics, 1-12.
[J.17] Ferhati, H., & Djeffal, F. (2024). A Framework for Designing Efficient Eco-Friendly Broadband GeSn/SnS Photodetector Based on Light Trapping Engineering. Plasmonics, 1-11.
[J.18] H. Ferhati, F AbdelMalek, F Djeffal, " Improved PCE in stable lead-free perovskite solar cells based on band engineering of ETL and absorber" Solar Energy, vol. 262, pp.111805, 2023. (IF= 6.2).
[J.19] F Djeffal, N Martin, H Ferhati, A Benhaya, " Tunable band-selective photodetector based on sputter-deposited SnOx thin-films: Effect of reactive gas pulsing process" Journal of Alloys and Compounds, vol. 968, pp. 171851, 2023. (IF= 6.8).
[J.20] A Maoucha, F Djeffal, H Ferhati, F AbdelMalek, " Eco-friendly perovskite/CZTSSe tandem cell exceeding 28% efficiency through current matching and bandgap optimization: a numerical investigation" The European Physical Journal Plus, vol. 138 (7),pp. 6202023, 2023. (IF= 3.4).
[J.21] H. Ferhati, F. Djeffal, F. AbdelMalek," Towards improved efficiency of SnS solar cells using back grooves and strained-SnO2 buffer layer: FDTD and DFT calculations" Journal of Physics and Chemistry of Solids, Vol. 178, pp. 111353, 2023. (IF= 4.38).
[J.22] H. Ferhati, F. Djeffal, L.B. Drissi, Performance analysis of a new Mid-Infrared phototransistor based on combined graded band gap GeSn sensitive-film and IGZO TFT platform, Micro and Nanostructures 173, 207467, 2023 (IF= 2.66).
[J.23] F Djeffal, H Ferhati, A Benyahia, Z Dibi, Performance analysis of SnS photodetector using strained SnO2 stacked layer: Numerical simulation and DFT calculations, Microelectronic Engineering, pp. 111961, 2023 (IF= 2.66).
[J.24] A. Maoucha, H. Ferhati, F. Djeffal " Highly efficient Cd-Free ZnMgO/CIGS solar cells via effective band-gap tuning strategy" Journal of Computational Electronics, pp.1-10, 2023. (IF= 1.98).
[J.25] B Zerroumda, H Ferhati, F Djeffal, S Benaggoune, "A novel high-performance junctionless 4H-SiC trench MOSFET with improved switching characteristics", Microelectronic Engineering, vol. 277, pp. 112011, 2023. (IF= 2.66).

[J.26] B Zerroumda, F Djeffal, S Benaggoune, H Ferhati, Performance assessment of a novel 4H–SiC junctionless planar power MOSFET towards improving electrical properties, Micro and Nanostructures 169, 207346, 2022 (3.22).
[J.27] Ramadan, F. Z., Djeffal, F., Drissi, L. B., Saidi, S., & Ferhati, H. (2022). Highly efficient ACdTS kesterite solar cell based on a new photovoltaic material. Journal of Physics and Chemistry of Solids, 161, 110458. (IF= 4.38).
[J.28] Farah, S. E., Dibi, Z., Ferhati, H., & Djeffal, F**.** (2022). DFT-FDTD modeling of a new broadband mid-infrared IGZO thin-film phototransistor based on black phosphorus capping layer incorporating intermediate metallic film. Journal of Physics and Chemistry of Solids, 162, 110528. (IF= 4.38).
[J.29] Ferhati, H., Djeffal, F., & Drissi, L. B. (2022). Metaheuristic-based decision maker framework for the development of multispectral IGZO thin-film phototransistors. Journal of Science: Advanced Materials and Devices, 7(1), 100414. (IF= 7.32).
[J.30] Benyekken, C., Benhaya, A., Djeffal, F., & Chahdi, M. (2022). Impact of Cathodic Potential on the Growth Mechanisms and Morphology of Ni–P Alloys Using Electrodeposition Technique. Transactions on Electrical and Electronic Materials, 23(1), 52-63. (IF= 1.32).
[J.31] Farah, S. E., Ferhati, H., Dibi, Z., & Djeffal, F. (2022). Performance analysis of broadband Mid-IR graphene-phototransistor using strained black phosphorus sensing gate: DFT-NEGF investigation. Micro and Nanostructures, 163, 107187. (IF= 3.22).
[J.32] Ferhati, H., Djeffal, F., Bendjerad, A., Foughali, L., Benhaya, A., & Saidi, A. (2022). Highly-detective tunable band-selective photodetector based on RF sputtered amorphous SiC thin-film: Effect of sputtering power. Journal of Alloys and Compounds, 907, 164464. (IF= 6.37).
[J.33] Kacha, K., Djeffal, F., Ferhati, H., Foughali, L., Bendjerad, A., Benhaya, A., & Saidi, A. (2022). Efficiency improvement of CIGS solar cells using RF sputtered TCO/Ag/TCO thin-film as prospective buffer layer. Ceramics International, 48(14), 20194-2020. (IF= 5.53).
[J.34] Kacha, K., Djeffal, F., Ferhati, H., Bendjerad, A., Benhaya, A., & Saidi, A. (2022). Broadband spectral photodetector based on all-amorphous ZnO/Si heterostructure incorporating Ag intermediate thin-films. Optical Materials, 130, 112578. (IF= 3.75).
[J.35] A Betka, B Bentabet, A Bouzid, F Djeffal, H Ferhati, A Azbouche, An empirical model for the Backscattering coefficient of 1-30 keV electrons from thin film targets, REVISTA MEXICANA DE FISICA 68 (4), 2022. (IF= 1.52).
[J.36] Djeffal, F., Boubiche, N., Ferhati, H., Faerber, J., Le Normand, F., Javahiraly, N., & Fix, T. (2021). Highly efficient and low-cost multispectral photodetector based on RF sputtered a-Si/Ti multilayer structure for Si-photonics applications. Journal of Alloys and Compounds, 876, 160176. (IF= 6.37).
[J.37] Ferhati, H., Djeffal, F., Boubiche, N., Benhaya, A., Faerber, J., Le Normand, F., ... & Fix, T. (2021). Absorption enhancement in amorphous Si by introducing RF sputtered Ti intermediate layers for photovoltaic applications. Materials Science and Engineering: B, 269, 115152. (IF= 4.05).
[J.38] Ferhati, H., Djeffal, F., Bendjerad, A., Saidi, A., & Benhaya, A. (2021). Post-annealing effects on RF sputtered all-amorphous ZnO/SiC heterostructure for solar-blind highly-detective and ultralow dark-noise UV photodetector. Journal of Non-Crystalline Solids, 574, 121168. (IF= 4.46).
[J.39] F.Z. Ramadan, F.Djeffal, L.B. Drissi, S.Saidi, H.Ferhati, Highly efficient ACdTS kesterite solar cell based on a new photovoltaic material, Journal of Physics and Chemistry of Solids, 2021, https://doi.org/10.1016/j.jpcs.2021.110458, (IF= 4.38).
[J.40] El-Bakkali, A., Sadki, S., Drissi, L. B., & Djeffal, F. (2021). Layers engineering optoelectronic properties of 2D hexagonal GeS materials. Physica E: Low-dimensional Systems and Nanostructures, 133, 114791. (IF= 3.34).
[J.41] Kadri, A., Ferhati, H., & Djeffal, F. (2021). Giant responsivity of a new optically controlled graphene UV-phototransistor using graded band-gap ZnMgO gate. Sensors and Actuators A: Physical, 325, 112701. (IF= 3.40).
[J.42] Ferhati, H., Djeffal, F., & Drissi, L. B. (2021). Enhanced infrared photoresponse of a new InGaZnO TFT based on Ge capping layer and high-k dielectric material. Superlattices and Microstructures, 106967. (IF= 2.64).
[J.43] Ferhati, H., Bendjerad, A., Djeffal, F., Benhaya, A., & Saidi, A. (2021). Multispectral photodetection using low-cost sputtered NiO/Ag/ITO heterostructure: From design concept to elaboration. Ceramics International, 47(11), 15703-15709. (IF= 4.52).

[J.44] Benyahia, K., Djeffal, F., Ferhati, H., Benhaya, A., Bendjerad, A., Djaballah, Y., & Martin, N. (2021). Microstructured ZnO-ZnS composite for earth-abundant photovoltaics: Elaboration, surface analysis and enhanced optical performances. Solar Energy, 218, 312-319. (IF= 5.74).

[J.45] Ferhati, H., Djeffal, F., Bendjerad, A., Benhaya, A., & Saidi, A. (2021). Perovskite/InGaAs tandem cell exceeding 29% efficiency via optimizing spectral splitter based on RF sputtered ITO/Ag/ITO ultra-thin structure. Physica E: Low-dimensional Systems and Nanostructures, 128, 114618. (IF= 3.34).

[J.46] Ferhati, H., & Djeffal, F. (2021). Giant responsivity of a new InGaZnO ultraviolet thin-film phototransistor based on combined dual gate engineering and surface decorated Ag nanoparticles aspects. Sensors and Actuators A: Physical, 318, 112523. (IF= 3.40).

[J.47] Kebabi, A., Bentabet, A., Djeffal, F., Ferhati, H., Benmekideche, N., Benmakhlouf, A., & Chala, A. (2021). DFT study of X-doped (X= Cu, Ag, Au) boron nitride nanotubes for spintronic and optoelectronic applications. Optik, 225, 165863. (IF= 2.9).

[J.48] Ferhati, H., Djeffal, F., Saidi, A., Benhaya, A., & Bendjerad, A. (2021). Effects of annealing process on the structural and photodetection properties of new thin-film solar-blind UV sensor based on Si-photonics technology. Materials Science in Semiconductor Processing, 121, 105331. (IF= 4.2).

[J.49] Ferhati, H., Djeffal, F., & Martin, N. (2020). Highly improved responsivity of self-powered UV–Visible photodetector based on TiO2/Ag/TiO2 multilayer deposited by GLAD technique: Effects of oriented columns and nano-sculptured surface. Applied Surface Science, 529, 147069. (IF= 6.75).

[J.50] Benyahia, K., Djeffal, F., Ferhati, H., Bendjerad, A., Benhaya, A., & Saidi, A. (2020). Self-powered photodetector with improved and broadband multispectral photoresponsivity based on ZnO-ZnS composite. Journal of Alloys and Compounds, 158242. (IF= 5.31).

[J.51] Ferhati, H., Djeffal, F., & Drissi, B. L. (2020). Performance improvement of Perovskite/CZTS tandem solar cell using low-cost ZnS/Ag/ITO multilayer spectrum splitter. Superlattices and Microstructures, 148, 106727. (IF= 3.22).

[J.52] Ferhati, H., Djeffal, F., & Drissi, L. B. (2020). Performance assessment of a new infrared phototransistor based on JL-TFET structure: numerical study and circuit level investigation. Optik, 165471. (IF= 2.9).

[J.53] Ferhati, H., Djeffal, F., Bendjerad, A., Saidi, A., & Benhaya, A. (2020). Novel solar-blind ultraviolet photodetector based on inserting sputtered ITO ultrathin film for integrated silicon photonics platform. Superlattices and Microstructures, 106564. (IF= 3.22).

[J.54] H Ferhati, F Djeffal, BL Drissi, (2020). Performance improvement of Perovskite/CZTS tandem solar cell using low-cost ZnS/Ag/ITO multilayer spectrum splitter, Superlattices and Microstructures, 106727. (/IF= 3.22).

[J.55] Saaoud, M., Sadki, K., Drissi, L. B., & Djeffal, F**.** (2020). Mechanical response of η-layered borophene: impact of strain, temperature, vacancies and intercalation. The European Physical Journal Applied Physics, 90(3), 30401. (IF= 3.1).

[J.56] H Ferhati, F Djeffal, N. Boubiche, F. Le-Normand, An efficient ITO-free transparent electrode based on diamond-like carbon with an engineered intermediate metallic thin-film, Solar Energy, Vol. 196, Pages 327-335, 2020. (IF= 7.74).

[J.57] H Ferhati, F Djeffal, A. Benhaya, N. Martin, Highly sensitive, ultra-low dark current, self-powered solar-blind ultraviolet photodetector based on ZnO thin-film with an engineered rear metallic layer, Materials Science in Semiconductor Processing, vol. 110, 104957, 2020. (IF= 4.2).

[J.58] L. B. Drissi, F. Z. Ramadan, H. Ferhati, F. Djeffal and N. B.-J. Kanga, New highly efficient 2D SiC UV-absorbing material with plasmonic light trapping, Journal of Physics Condensed Matter vol. 32, pp. 025701, 2020. (IF= 2.7).

[J.59] H. Ferhati, F. Djeffal and L. B. Drissi, A new approach to the modeling and simulation of multi-junction solar cells, Optik vol. 200, pp.163452, 2020. (IF= 2.9).

[J.60] H. Ferhati, F. Djeffal, Performance assessment of TCO/Metal/TCO multilayer transparent electrodes: from design concept to optimization, Journal of Computational Electronics, pp.1-8, 2020. (IF= 1.98).

[J.61] H. Ferhati, F. Djeffal, Plasmonic effect of metal nanoparticles on enhancing performance of transparent electrodes: A computational Investigation, Journal of Computational Electronics, 19 (1), 333-341, 2020. (IF= 1.98).

[J.62] H. Ferhati and F. Djeffal, Performance assessment of Gr/Si/Gr UV-photodetector: Design and optimization of graphene interdigitated electrodes, Superlattices and Microstructures 132, 106166, 2019. (IF= 3.22).

[J.63] H. Ferhati and F. Djeffal, Enhanced performance of ultraviolet photodetector based on sputtered ZnO/Au/ZnO multilayer structure, Superlattices and Microstructures 134, 106225, 2019. (IF= 3.22).

[J.64] H Ferhati, F Djeffal, High-responsivity MSM solar-blind UV photodetector based on annealed ITO/Ag/ITO structure using RF sputtering, IEEE Sensors Journal, vol.18, pp. 1 –8, 2019 (IF= 4.30).

[J.65] F Djeffal, H Ferhati, A Benhaya, A Bendjerad, Effects of high temperature annealing in enhancing the optoelectronic performance of sputtered ITO/Ag/ITO transparent electrodes, Superlattices and Microstructures 130, 361-368, 2019. (IF= 3.22).

[J.66] H. Ferhati, F Djeffal, Exceeding 30% efficiency for an environment-friendly tandem solar cell based on earth-abundant Se/CZTS materials, Physica E: Low-dimensional Systems and Nanostructures Vol. 109, 52-58, 2019. (IF= 3.34).

[J.67] F Djeffal, H Ferhati, A Benhaya, A Bendjerad, Effects of annealing temperature and ITO intermediate thin-layer on electrical proprieties of Au/p-Si structure deposited by RF magnetron sputtering, Superlattices and Microstructures, Vol. 128, 382-391, 2019. (IF= 3.22).

[J.68] H Ferhati, F Djeffal, K Kacha, A Bendjerad, A Benhaya, Influence of TCO intermediate thin-layers on the electrical and thermal properties of metal/TCO/p-Si Schottky structure fabricated via RF magnetron sputtering Physica E: Low-dimensional Systems and Nanostructures 106, 25-30, 2019. (IF= 3.34).

[J.69] N Boubiche, J El Hamouchi, J Hulik, M Abdesslam, C Speisser, F Djeffal**,** Kinetics of graphitization of thin diamond-like carbon (DLC) films catalyzed by transition metal, Diamond and Related Materials 91, 190-198, 2019. (Indexed by: Scopus/ISI Thomson/IF= 3.31).

[J.70] M. Kadri, F. Djeffal**,** H. Ferhati, Performance analysis of a new graphene based-phototransistor for ultra-sensitive infrared sensing applications, Optik 176, 24-31, 2019. (Indexed by: Scopus/ISI Thomson/IF= 2.4).

[J.71] A Bendjerad, A Benhaya, T Bentrcia, F Djeffal, M Zergoug, F Smaïli, Determination of magnetic properties of a Ni/NiO/Ni multilayer: an ANFIS-based predictive technique, Applied Physics A 125 (1), 56, 2019. (Indexed by: Scopus/ISI Thomson/IF= 2.71).

[J.72] H Ferhati, F Djeffal, An efficient analytical model for tandem solar cells, Materials Research Express 6 (7), 076424, 2019. (Indexed by: Scopus/ISI Thomson/IF= 1.4).

[J.73] H Ferhati, F Djeffal, A Benhaya, Optimized high-performance ITO/Ag/ITO multilayer transparent electrode deposited by RF magnetron sputtering, Superlattices and Microstructures 129, 176-184, 2019. (Indexed by: Scopus/ISI Thomson/IF= 2.64).

[J.74] T Bentrcia, F Djeffal, H Ferhati, Z Dibi, A Comparative Study on Scaling Capabilities of Si and SiGe Nanoscale Double Gate Tunneling FETs, Silicon journal, 1-8, 2019. (Indexed by: Scopus/ISI Thomson/IF= 2.67).

[J.75] K Tamersit, F Djeffal, A computationally efficient hybrid approach based on artificial neural networks and the wavelet transform for quantum simulations of graphene nanoribbon FETs, Journal of Computational Electronics, 1-13, 2019. (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.76] N Abdelmalek, F Djeffal, T Bentrcia, A nonlocal approach for semianalytical modeling of a heterojunction vertical surrounding-gate tunnel FET, Journal of Computational Electronics, 18, 104–119, 2019. (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.77] Drissi, L.B., Kanga, N.B.-J., Lounis, S., Djeffal, F., Haddad, S., Electron-phonon dynamics in 2D carbon based-hybrids XC (X = Si, Ge, Sn), Journal of Physics Condensed Matter 31(13),135702, 2019. (Indexed by: Scopus/ISI Thomson/IF= 2.71).

[J.78] H Ferhati, F Djeffal, D Arar, Above 14% efficiency earth-abundant selenium solar cells by introducing gold nanoparticles and Titanium sub-layer, Optical Materials 86, 24-31, 2018. (Indexed by: Scopus/ISI Thomson/IF= 3.08).

[J.79] H Ferhati, F Djeffal, Enhanced optical and electrical performances of UV-phototransistor using graded band-gap ZnMgO photosensitive gate, Journal of Computational Electronics 17 (3), 1181-119, 2018. (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.80] F. Menacer, Z. Dibi, A Kadri, F. Djeffal, A new smart nanoforce sensor based on suspended gate SOIMOSFET using carbon nanotube, Measurement, vol. 125, pp. 232-242, 2018 (Indexed by: Scopus/ISI Thomson/IF= 3.92).

[J.81] H. Ferhati, F. Djeffal, Reliability Investigation of Nanoscale Junctionless GAA MOSFET Against Degradation-Related Ageing Effects, Journal of Nanoelectronics and Optoelectronics, vol. 13, pp. 1106-1113, 2018 (Indexed by: Scopus/ISI Thomson/IF= 1.6).

[J.82] H. Ferhati, F. Djeffal, T Bentrcia, The role of the Ge mole fraction in improving the performance of a nanoscale junctionless tunneling FET: concept and scaling capability,

Beilstein Journal of Nanotechnology, vol. 9, pp. 1856-1862, 2018 (Indexed by: Scopus/ISI Thomson/IF= 3.1).

[J.83] K. Tamersit, F. Djeffal, A novel graphene field-effect transistor for radiation sensing application with improved sensitivity: Proposal and analysis, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, vol. 901, pp. 32-39, 2018 (Indexed by: Scopus/ISI Thomson/IF= 1.6).

[J.84] A. Benhaya, F. Djeffal, K. Kacha, H. Ferhati, A. Bendjerad, Role of ITO ultra-thin layer in improving electrical performance and thermal reliability of Au/ITO/Si/Au structure: An experimental investigation, Superlattices and Microstructures, vol. 120, pp. 419-426, 2018 (Indexed by: Scopus/ISI Thomson/IF= 2.64).

[J.85] N. Abdelmalek, F. Djeffal, T. Bentrcia, Continuous semianalytical modeling of vertical surrounding-gate tunnel FET: analog/RF performance evaluation, Journal of Computational Electronics, vol. 17, pp. 724-735, 2018 (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.86] H. Ferhati, F. Djeffal, Boosting the optical performance and commutation speed of phototransistor using SiGe/Si/Ge tunneling structure, Mater. Res. Express, vol. 5, pp. 065902, 2018 (Indexed by: Scopus/ISI Thomson/IF= 1.4).

[J.87] H. Ferhati, F. Djeffal, Role of Graded Channel Doping Engineering in Improving Junctionless GAA MOSFET Performance for Ultra Low-Leakage Power Applications, Journal of Nanoelectronics and Optoelectronics, vol. 13, pp. 521-530, 2018 (Indexed by: Scopus/ISI Thomson/IF= 1.1).

[J.88] H. Ferhati, F. Djeffal, Role of intermediate metallic sub-layers in improving the efficiency of kesterite solar cells: concept and optimization, Mater. Res. Express, vol. 5, pp. 036417, 2018 (Indexed by: Scopus/ISI Thomson/IF= 1.4).

[J.89] H. Ferhati, F. Djeffal, Graded channel doping junctionless MOSFET: a potential high performance and low power leakage device for nanoelectronic applications, Journal of Computational Electronics, vol. 17, pp. 129-137, 2018 (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.90] H. Ferhati, F. Djeffal, Graded band-gap engineering for increased efficiency in CZTS solar cells, Optical Materials, vol. 76, pp. 393-399, 2018 (Indexed by: Scopus/ISI Thomson/IF= 3.08).

[J.91] H. Ferhati, F. Djeffal, K. Kacha, Optimizing the optical performance of ZnO/Si-based solar cell using metallic nanoparticles and interface texturization, Optik-International Journal for Light and Electron Optics, vol. 153, pp. 43-49, 2018 (Indexed by: Scopus/ISI Thomson/IF= 2.24).

[J.92] H. Ferhati, F. Djeffal, Role of non-uniform Ge concentration profile in enhancing the efficiency of thin-film SiGe/Si Solar Cells, Optik-International Journal for Light and Electron Optics, vol. 158, pp. 192-198, 2018 (Indexed by: Scopus/ISI Thomson/IF= 2.24).

[J.93] H. Ferhati, F. Djeffal**,** A novel high-performance self-powered ultraviolet photodetector: Concept, analytical modeling and analysis, Superlattices and Microstructures, vol. 112, pp.480-492, 2017. (Indexed by: Scopus/ISI Thomson/IF= 2.64).

[J.94] H. Ferhati, F. Djeffal, D Arar, Z. Dibi, Efficiency Enhancement of a-Si:H/c-Si-Based Radial Solar Cell by Optimizing the Geometrical and Electrical Parameters, Physica Status Solidi (C) Current Topics in Solid State Physics, vol.14, pp.147-152, 2017 (Indexed by: Scopus).

[J.95] T. Bentrcia, F. Djeffal, D Arar, E. Chebaki, Improved Reliability Performance of Junctionless Nanoscale DG MOSFET with Graded Channel Doping Engineering, Physica Status Solidi (C) Current Topics in Solid State Physics, vol.14, pp.146-152, 2017 (Indexed by: Scopus).

[J.96] H. Ferhati, F. Douak, F. Djeffal**,** Role of non-uniform channel doping in improving the nanoscale JL DG MOSFET reliability against the self-heating effects, Superlattices and Microstructures, vol. 109, pp.869-879, 2017. (Indexed by: Scopus/ISI Thomson/IF= 2.64).

[J.97] H. Ferhati, F Djeffal, Improved ZnO/glass thin film UV photodetector performance based on introduction of intermediate metallic sub-layers, Materials Today: Proceedings, vol. 4, pp.6804-6813, 2017 (Indexed by: Scopus).

[J.98] T. Bentrcia, F Djeffal, E. Chebaki, D. Arar, A Kriging framework for the efficient exploitation of the nanoscale junctioless DG MOSFETs including source/drain extensions and hot carrier effect, Materials Today: Proceedings, vol. 4, pp.6930-6937, 2017 (Indexed by: Scopus).

[J.99] H Ferhati, F Djeffal, D Arar, Z Dibi, Role of metal layer in improving the UV-photodetector performance of TiO_2/Metal/TiO_2/Si structure, Journal of Luminescence, vol. 191, Part B, pp. 117-121, 2017. (Indexed by: Scopus/ISI Thomson/IF= 3.59).

[J.100] H Ferhati, F Djeffal, Planar junctionless phototransistor: A potential high-performance and low-cost device for optical-communications, Optics & Laser Technology, vol. 97, pp. 29-35, 2017. (Indexed by: Scopus/ISI Thomson/IF= 3.86).

[J.101] H Ferhati, F Djeffal, Novel high-performance SOI junctionless FET-based phototransistor using channel doping engineering: Numerical investigation and sensitivity analysis, Optik-International Journal for Light and Electron Optics vol. 138, pp. 119–126, 2017 (Indexed by: Scopus/ISI Thomson/IF=2.44).

[J.102] F Srairi, F Djeffal**,** H Ferhati, Efficiency increase of hybrid organic/inorganic solar cells with optimized interface grating morphology for improved light trapping, Optik-International Journal for Light and Electron Optics vol.130, pp. 1092-1098, 2017 (Indexed by: Scopus/ISI Thomson/IF= 2.44).

[J.103] H Ferhati, F Djeffal, F Srairi, Enhancement of the absorbance figure of merit in amorphous-silicon pin solar cell by using optimized intermediate metallic layers, Optik-International Journal for Light and Electron Optics vol.130, 473-480, 2017 (Indexed by: Scopus/ISI Thomson/IF= 2.44).

[J.104] D. Rechem, K. Aicha, A. Souifi, F. Djeffal, Effect of annealing time on the performance of tin oxide thin films ultraviolet photodetectors, Thin Solid Films, vol.623, pp. 1–7, 2017. (Indexed by: Scopus/ISI Thomson/IF= 2.18).

[J.105] H Ferhati, F Djeffal**,** T Bentercia, Numerical Investigation of A New Junctionless Phototransistor for High-Performance and Ultra-Low Power Infrared Communication Applications TELKOMNIKA (Telecommunication Computing Electronics and Control) vol.14, pp.1-3, 2016 (**Editorial paper**).

[J.106] H. Bencherif, F. Djeffal**,** H. Ferhati, Performance enhancement of Pt/TiO 2/Si UV-photodetector by optimizing light trapping capability and interdigitated electrodes geometry, Superlattices and Microstructures, vol. 97, pp.303-312, 2016. (Indexed by: Scopus/ISI Thomson/IF= 2.64).

[J.107] K. Tamersit, F. Djeffal, Double-Gate Graphene Nanoribbon Field-Effect Transistor for DNA and Gas Sensing Applications: Simulation Study and Sensitivity Analysis, IEEE Sensors Journal, vol.16, pp. 4180 – 4191, 2016 (Indexed by: Scopus/ISI Thomson/IF= 3.66).

[J.108] R. Djamil, K Aicha, A Cherifa, F. Djeffal, Impacts of high-k gate dielectrics and low temperature on the performance of nanoscale CNTFETs, Journal of Computational Electronics vol. 15, 1308-1315, 2016 (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.109] H. Ferhati, F. Djeffal, Role of Optimized Grooves Surface-Textured Front Glass in Improving TiO2 Thin Film UV Photodetector Performance, IEEE Sensors Journal, vol.16, pp.5618-5625, 2016 (Indexed by: Scopus/ISI Thomson/IF= 3.66).

[J.110] H. Ferhati, F. Djeffal, New high performance ultraviolet (MSM) TiO_2/Glass photodetector based on diffraction grating for optoelectronic applications, Optik - International Journal for Light and Electron Optics, vol. 127, pp. 7202-7209, 2016. (Indexed by: Scopus/ISI Thomson/IF= 2.4).

[J.111] H. Ferhati, F. Djeffal, Role of gradual gate doping engineering in improving phototransistor performance for ultra-low power applications, Journal of Computational Electronics, vol. 15, pp 550-556, 2016 (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.112] F. Djeffal, H. Ferhati, A new high-performance phototransistor design based on both surface texturization and graded gate doping engineering, Journal of Computational Electronics, vol. 15, pp 301-310, 2016 (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.113] T. Bentrcia, F. Djeffal, D. Arar, M. Meguellati, Numerical investigation of nanoscale double-gate junctionless MOSFET with drain and source extensions including interfacial defects, Physica Status Solidi (C) Current Topics in Solid State Physics, vol.13, pp.151-155, 2016(Indexed by: Scopus).

[J.114] E. Chebaki, F. Djeffal, H. Ferhati, T. Bentrcia, Improved analog/RF performance of double gate junctionless MOSFET using both gate material engineering and drain/source extensions, Superlattices and Microstructures vol. 92, pp. 80-91, 2016 (Indexed by: Scopus/ISI Thomson/IF= 2.64).

[J.115] T. Bentrcia**,** F. Djeffal, E. Chebaki, D. Arar, Impact of the drain and source extensions on nanoscale Double-Gate Junctionless MOSFET analog and RF performances, Materials Science in Semiconductor Processing vol. 42, pp. 264-267, 2016. (Indexed by: Scopus/ISI Thomson/IF= 3.99).

[J.116] F. Djeffal, H. Ferhati, T. Bentrcia, Improved analog and RF performances of gate-all-around junctionless MOSFET with drain and source extensions, Superlattices and Microstructures, vol. 90, pp. 132-140, 2016. (Indexed by: Scopus/ISI Thomson/IF= 2.64).

[J.117] F. Srairi, L. Saidi, F. Djeffal, M. Meguellati, Modeling, control and optimization of a new swimming microrobot design, Engineering Letters, vol.24, pp. EL-24-1-15, 2016. (Indexed by: Scopus/ISI Thomson/IF= 0.4).

[J.118] T. Bentrcia, F. Djeffal, D. Arar and Z. Dibi, Numerical investigation of nanoscale SiGe DG MOSFET performance against the interfacial defects , Physica status solidi C, vol. 11, pp. 131-135, 2015. (Indexed by: Scopus).

[J.119] K. Kacha, F. Djeffal, H. Ferhati, M. Meguellati, Numerical investigation of a double-junction a:SiGe thin-film solar cell including the multi-trench region, Journal of Semiconductors, vol. 36, pp. 064004-1- 064004-5, 2015. (Indexed by: Scopus).

[J.120] T. Bendib, F. Djeffal, and M. Meguellati, An optimized junctionless GAA MOSFET design based on multi-objective computation for high-performance ultra-low power devices, Journal of Semiconductors, vol. 35, pp. 074002-1-074002-6, 2014. (Indexed by: Scopus).

[J.121] K. Kacha, F. Djeffal, T. Bentrcia, A. Benhaya, M. Meguellati and M. Chahdi, "Numerical investigation of the SiGe/Si heterostructure including Interfacial defects for photovoltaic applications, Advanced Materials Research Journal, vol. 856, pp 188-192, 2014.(Indexed by: Scopus).

[J.122] N. Abdelmalek, F. Djeffal, M. Meguellati and T. Bendib, "Numerical analysis of nanoscale junctionless MOSFET including effects of hot-carrier induced interface charges," Advanced Materials Research Journal, vol. 856, pp 137-141, 2014.(Indexed by: Scopus)

[J.123] D. Arar, F. Djeffal, T. Bentrcia and M. Chahdi, New junctionless RADFET dosimeter design for low-cost radiation monitoring applications, Physica status solidi C, vol. 11, pp. 65-68, 2014. (Indexed by: Scopus)

[J.124] T. Bentrcia, F. Djeffal, D. Arar and Z. Dibi, Gate-engineering-based approach to improve the nanoscale DG MOSFET behavior against interfacial trap effects, Physica status solidi C, Vol. 11, pp. 77-80, 2014. (Indexed by: Scopus)

[J.125] F. Djeffal, N. Lakhdar, An improved analog electrical performance of submicron Dual-Material gate (DM) GaAs-MESFETs using multi-objective computation, Journal of Computational Electronics, Vol. 12, pp 29-35, 2013. (Indexed by: Scopus/ISI Thomson/IF= 1.8)

[J.126] T. Bentrcia, F. Djeffal, M. Chahdi, An analytical two dimensional subthreshold behavior model to study the nanoscale GCGS DG Si MOSFET including interfacial trap effects, Microelectronics Reliability, vol.53, pp. 520-527, 2013. (Indexed by: Scopus/ISI Thomson/IF= 1.7)

[J.127] T. Bentrcia, F. Djeffal and E. Chebaaki, ANFIS-based approach to studying subthreshold behavior including the traps effect for nanoscale thin-film DG MOSFETs, J. Semicond. Vol. 34, pp.084001, 2013.(Indexed by: Scopus)

[J.128] T. Bendib, F. Djeffal and D. Arar, A compact charge-based model to study the nanoscale undoped double gate MOSFETs for nanoelectronic circuitdesign using genetic algorithms. J. Semicond, vol. 34, pp. 044003, 2013. (Indexed by: Scopus)

[J.129] F. Djeffal, T. Bendib, D. Arar, Z. Dibi, An optimized metal grid design to improve the solar cell performance under solar concentration using multiobjective computation, Materials Science and Engineering: B, Vol. 178, pp. 574-579, 2013. (Indexed by: Scopus/ISI Thomson/IF= 4.05)

[J.130] T. Bentrcia, F. Djeffal, Continuous analytic I-V model for GS DG MOSFETs including hot-carrier degradation effects, , Journal of Semiconductors, Vol. 33, pp. 014001.1-014001.6, 2012. (Indexed by: Scopus)

[J.131] N. Lakhdar F. Djeffal, Z. Dibi, A new Dual-Material (DM) gate design to improve the subthreshold behavior of deep submicron GaN-MESFETs, Physica status solidi C, Vol. 09, pp. 1109-1113, 2012. (Indexed by: Scopus)

[J.132] N. Lakhdar and F. Djeffal, New optimized Dual-Material (DM) gate design to improve the submicron GaN-MESFETs reliability in subthreshold regime, Microelectronics Reliability, vol.56, pp. 958–963, 2012. (Indexed by: Scopus/ISI Thomson/IF= 1.58)

[J.133] M.A. Abdi, F. Djeffal, D. Arar, Compact Charge Model for Ultra-thinNanoscale Double Gate MOSFETs, Science Jet C, vol.1, pp.1-8, 2012.

[J.134] T. Bentricia, F. Djeffal, Continuous analytic I-V model for GS DG MOSFETs including hot-carrier degradation effects, Journal of Semiconductors, Vol. 33, pp. 014001.1-014001.6, 2012. (Indexed by: Scopus)

[J.135] M. Meguellati**,** F. Djeffal, New Dual-Dielectric Gate All Around (DDGAA) RADFET dosimeter design to improve the radiation sensitivity, Nuclear Instruments and Methods in

Physics Research Section A, Vol. 683, pp. 24–28, 2012. (Indexed by: Scopus/ISI Thomson/IF= 1.8)

[J.136] A. Maoucha, F. Djeffal, Multi-objective-optimization-based approach to improve the electrical efficiency for organic solar cells, Journal of Computational Electronics, Vol. 11, pp 336-343, 2012. (Indexed by: Scopus/ISI Thomson/IF= 1.8)

[J.137] T Bendib, F. Djeffal, D Arar, Z Dibi and A Ferdi, Fuzzy-logic-based approach to study the electrons mobility in nanoscale Double Gate MOSFETs , IOP Conf. Ser.: Mater. Sci. Eng. Vol. 41, pp. 012016, 2012. (Indexed by: Scopus)

[J.138] F. Djeffal, A. Ferdi and M. Chahdi, A fuzzy-logic-based approach to accurate modeling of a double gate MOSFET for nanoelectronic circuit design. J. Semicond. Vol. 33.pp. 094001, 2012. (Indexed by: Scopus)

[J.139] M. Meguellati, F. Djeffal, D. Arar, F. Douak and L. Khettache, New RADFET Dosimeter Design For Radioactive Environment Monitoring Applications. Engineering Letters, Vol. 20. (4), pp. EL 20-4-06, 2012. (Indexed by: Scopus/ISI Thomson/IF= 0.44)

[J.140] Elasaad Chebaki, F. Djeffal, Toufik Bentrcia, Two-dimensional numerical analysis of nanoscale junctionless and conventional Double Gate MOSFETs including the effect of interfacial traps, Physica status solidi C, Vol. 09, pp. 2041-2044, 2012. (Indexed by: Scopus)

[J.141] M. A. Abdi, F. Djeffal**,** Z. Dibi, D. Arar, A two-dimensional analyticalsubthreshold behavior analysis including hot-carrier effect for nanoscaleGate Stack Gate All Around (GASGAA) MOSFETs, Journal of Computational Electronics, pp. 179-185, Vol. 10. 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.8)

[J.142] F. Kadri, S. Drid, D. Djarah, F. Djeffal, Direct torque control of induction motor fed by three-phase PWM inverter using fuzzy logic and neural network, J. Electromotion, pp. 22-28, vol. 18, 2011.

[J.143] T. Bendib, F. Djeffa**l** and D. Arar, Subthreshold behavior optimization of nanoscale Graded Channel Gate Stack Double Gate (GCGSDG) MOSFET using multi-objective genetic algorithms, Journal of Computational Electronics, pp. 210-215, Vol. 10, 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.8).

[J.144] F. Djeffal, T. Bentrcia, M.A. Abdi, T. Bendib, Drain current model for undoped Gate Stack Double Gate (GSDG) MOSFETs including the hot-carrier degradation effects, Microelectronics Reliability, pp. 550-555, Vol. 51, 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.8)

[J.145] F. Djeffal, T. Bentrcia, and T. Bendib, An analytical drain current model for undoped GSDG MOSFETs including interfacial hot-carrier effects, Physica status solidi C, Vol. 8 (3), pp. 907-910, 2011. (Indexed by: Scopus)

[J.146] T.Bendib, F. Djeffal, Electrical Performance Optimization of NanoscaleDouble-Gate MOSFETs Using Multi-objective Genetic Algorithms, IEEE Trans on Electron Devices, Vol. 58, pp. 3743 – 3750, 2011. (Indexed by: Scopus/ISI Thomson/IF= 2.9)

[J.147] F. Djeffal, N. Lakhdar, A. Yousfi, An optimized design of 10-nm-scale dual-material surrounded gate MOSFETs for digital circuit applications, Physica E:Low-dimensional Systems and Nanostructures, Vol. 44, pp. 339-344, 2011. (Indexed by: Scopus/ISI Thomson/IF= 3.4).

[J.148] F. Djeffal, T.Bendib, M.A. Abdi, A Two-dimensional semi-analytical analysis of the subthreshold-swing behavior including free carriers and interfacial traps effects for nanoscale Double-Gate MOSFETs, J. Microelectronics, Vol. 42, pp. 1391-1395, 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.4).

[J.149] F. Djeffal., A. Arar, N. Abdelmalek, M.A. Abdi, R. Mahamdi, A. Errachid, A junctionless-multigate design to improve the electrical performances for deep submicron ISFET-based sensors. Sensor Letters, 9(6), 2309-2311, 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.6).

[J.150] M.A. Abdi, F. Djeffal, T. Bentrcia and D. Arar, An explicit Continuousanalytical model for Gate All Around (GAA) MOSFETs including the hot-carrier degradation effects, J. Nanosciences and Nanotechnology, Vol. 11, pp. 9316-9320, 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.6)

[J.151] N. Lakhdar, F. Djeffal, An analytical analysis of subthreshold behavior to study the scaling capability of deep submicron DG MESFETs, Journal of Computational Electronics, Vol. 10, pp. 382-387. 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.32).

[J.152] F. Djeffal, D. Arar, M.A. Abdi, R. Mahamdi and A. Errachid, A multigate design to improve the electrical performance for deep submicron ISFET-based sensors, Sensor Letters, Vol. 9, pp. 2309-2311, 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.61).

[J.153] F. Djeffal and T. Bendib, Multi-objective genetic algorithms based approach to optimize the electrical performances of the gate stack Double Gate (GSDG) MOSFET, J. Microelectronics, Vol. 42, pp. 661-666, 2011. (Indexed by: Scopus/ISI Thomson/IF= 1.4)

[J.154] Z. Ghoggali, F. Djeffal, N. Lakhdar, Analytical analysis of nanoscale Double-Gate MOSFETs including the hot-carrier degradation effects, Int. J. Electronics, pp. 119-127, 97(2), 2010. (Indexed by: Scopus/ISI Thomson/IF= 1.51).

[J.155] F. Djeffal, T. Bendib, R. Benzid, A. Benhaya, An approach based on particle swarm computation to simulate the nanoscale DG MOSFET-based circuits, Turkish Journal of Electrical Engineering & Computer Sciences, pp. 1131-1141, Vol. 18 (06), 2010. (Indexed by: Scopus/ISI Thomson/IF= 0.56).

[J.156] N. Lakhdar, F. Djeffal and Z. Dibi, A Two-Dimensional Numerical Analysis of Subthreshold Performances for Double-Gate GaN-MESFETs, AIP Proceedings, Vol. 1292, pp. 173-176, 2010. (Indexed by: Scopus).

[J.157] F. Djeffal, M. Meguellati, N. Abdelmalek and T. Bendib, Numerical analysis of thin film Junctionless pH-ISFET sensor, Sensors and Transducers, Vol. 123, pp.35-40, 2010. (Indexed by: Scopus/ISI Thomson/IF= 0.42)

[J.158] T. Bentrcia, F. Djeffal and D. Arar, An Analytical Two Dimensional Subthreshold Current Model for Nanoscale GCGS DG MOSFET including Interfacial Traps Effects, Revue de Sciences et Technologie, pp. 103-112, Vol.1(2), 2010.

[J.159] Z. Dibi, F. Djeffal, N. Lakhdar, New gate stack double diffusion MOSFET design to improve the electrical performances for power applications, International Journal of Applied Science, Engineering and Technology, pp. 554-557, Vol.72, 2010. (Indexed by: Scopus)

[J.160] N. Lakhdar, F. Djeffal, A PSO-based analytical approach to study the electronmobility in 4H-SiC, Revue de Sciences et Technologie, pp. 75-80, Vol.1(2), 2010.

[J.161] T. Bendib, F. Djeffal, A. Benhaya, A PSO-based approach to study the nanoscale Double Gate- MOSFETs, Revue de Sciences et Technologie, pp. 14-22, Vol.1(2), 2010.

[J.162] T. Bendib, F.Djeffal, M. Maguellati, A. Benhaya and M. Chahdi, A compact drain current model based on Genetic algorithm computation to study the nanoscale Double-Gate MOSFETs, J. Semiconductor Physics, Quantum Electronics and Optoelectronics, pp. 27-30,12(1), 2009.

[J.163] F. Djeffal, D. Arar, N. Lakhdar, T. Bendib, Z. Dibi, M. Chahdi, An approach based on particle swarm computation to study the electron mobility in wurtzite GaN, Microelectronics Journal, pp. 357-359, 40(2), 2009. (Indexed by: Scopus/ISI Thomson/IF= 1.3).

[J.164] F. Djeffal, Z. Ghoggali, Z. Dibi and N. Lakhdar, Analytical analysis of nanoscale multiple gate MOSFETs including effects of hot-carrier induced interface charges, J. Microelectronics Reliability, pp. 377-381, 49(4), 2009. (Indexed by: Scopus/ISI Thomson/IF= 1.63).

[J.165] F. Djeffal, N. Lakhdar, M. Meguellati and A. Benhaya, Particle swarm optimization versus genetic algorithms to study the electron mobility in wurtzite GaN-based devices, Solid-State Electronics,pp.388-392, 53(9), 2009. (Indexed by: Scopus/ISI Thomson/IF= 1.68)

[J.166] F. Djeffal, M. Meguellati, A. Benhaya, A two-dimensional analytical analysis of subthreshold behavior to study the scaling capability of nanoscale graded channel gate stack DG MOSFETs, Physica E: Low-dimensional Systems and Nanostructures, pp. 1872-1877, 41, 2009. (Indexed by: Scopus/ISI Thomson/IF= 3.07).

[J.167] F. Djeffal, N. Lakhdar and T. Bendib, An Analytical Electron Mobility Model based on Particle Swarm Computation for Silicon-based Devices, International Journal of Applied Science, Engineering and Technology, pp. 129-132, 5(2) 2009. (Indexed by: Scopus)

[J.168] F. Djeffal, S. Guessasma, A. Benhaya and M. Chahdi, A neural computation to study the scaling capability of the undoped DG MOSFET, J. Semiconductor Physics, Quantum Electronics and Optoelectronics, pp. 196-202, 11(2), 2008.

[J.169] A. Cheknane, H.S. Hilal, F. Djeffal, B. Benyoucef, J-P Charles, An equivalent circuit approach to organic solar cell modelling, Microelectronic Journal, pp. 1173-1180, 39(10), 2008. (Indexed by: Scopus/ISI Thomson/IF= 1.92)

[J.170] M.A. Abdi, F. Djeffal, D. Arar, M.L. Hafiane, Numerical Analysis of Double-Gate and GAA MOSFETs with trap states, Journal of Materials Science: Materials in Electronics, pp. 248-253, 19(12), 2008. (Indexed by: Scopus/ISI Thomson/IF= 2.48).

[J.171] F.Djeffal, N. Lakhdar, A. Behaya, An accurate two-dimensional analytical subthreshold swing model to study the scaling capability of the surrounding-gate MOSFET, International Review of Physics. pp. 306-311, 2(5), 2008.

[J.172] B. Barkat, F. Djeffal, N. Abdelmalek and T. Bendib, Design, Control and Experimentation of an Improved Two Axis Sun Tracking System, International Review of Automatic Control, pp. 224-231,1(4), 2008.

[J.173] T. Bendib, B. Barkat, F. Djeffal, N. Hamia et A. Nidhal, Commande automatique d'un système de poursuite solaire à deux axes à base d'un microcontroleur PIC16F84A, Revue des Energies Renouvelables, pp. 523-532, 11(4), 2008.

[J.174] F.Djeffal, M. Chahdi, A. Benhaya, M.L.Hafiane, An approach based on neural computation to simulate the nanoscale CMOS circuits: Application to the simulation of CMOS inverter, Solid-State Electronics, pp.26-34, 51 (1), 2007. (Indexed by: Scopus/ISI Thomson/IF= 3.5).

[J.175] F.Djeffal, Z.Dibi, M.L.Hafiane and D. Arar, Design and simulation of a nanoelectronic DG MOSFET current source using artificial neural networks,Materials Sciences &Engineering C. pp.1111-1116, 27(5), 2007. (Indexed by: Scopus/ISI Thomson/IF= 1.84)

[J.176] F.Djeffal, M. Chahdi, "A Neural Approach to Estimate the Radiation Damageof the Solar Panels," International Review of Physics. pp. 45-52, 1(1), 2007.

[J.177] F. Djeffal, A. Abdi, Z. Dibi, M.Chahdi and A.Benhaya, A neural approach to study the scaling capability of the undoped Double-Gate and cylindrical Gate All around MOSFETs, Materials Sciences &Engineering B. pp.1111-1116,27(5), 2007. (Indexed by: Scopus/ISI Thomson/IF= 1.84)

[J.178] A. Cheknane, F. Djeffal, T.Bendib, SPICE Implementation of Neural-Based Models for Solar cells under solar concentration, International Review ofPhysics, pp. 177-183, 1(3), 2007.

[J.179] D. Arar, F. Djeffal, T.Bendib**,** A Neural Approach to Study the Transport Coefficients in the Crystalline Silicon, International Review of Physics, pp. 289-293, 1(4), 2007.

[J.180] F.Djeffal, S.Guessasma, A.Benhaya and M.Chahdi, An analytical approach based on neural computation to estimate the lifetime of deep submicron MOSFETs, Journal of Semicond. Sci. Technol. pp.158-164, 20(2), 2005. (Indexed by: Scopus/ISI Thomson/IF= 2.52)

[J.181] F.Djeffal, A. Benhaya and M. Chahdi, An improved experimental setup based on programmable electronics to determine the transport coefficients of semiconductors, J. Advancement of Modeling and Simulation Techniques in Enterprises. pp. 55-70, 78 (6), 2005.

4. Published papers in Referred Conferences

[C.1] Dekkiche, A., Ferhati, H., & Djeffal, F. (2024, December). Enhanced Sensitivity in IR GeSn Thin-Film Based Phototransistors by Using a Gaussian Doping Profile. In 2024 1st International Conference on Electrical, Computer, Telecommunication and Energy Technologies (ECTE-Tech) (pp. 1-4). IEEE.

[C.2] Kacha, K., Bendjrad, A., Ferhati, H., Djeffal, F., & Benhaya, A. (2024, October). Optical and Electrical Characteristics of Flexible AZO-Cu-AZO Structure Prepared Via RF Sputtering Technique. In 2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-4). IEEE.

[C.3] Dekkiche, A., Bellouber, M. O., Ferhati, H., Dibi, K., & Djeffal, F. (2024, October). Novel Ultraviolet Phototransistor Design Based On SnO 2 Thin-Film Combined with Surface Ag Nanoparticles. In 2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-4). IEEE.

[C.4] Kacha, K., Ferhati, H., Bendjrad, A., Djeffal, F., & Benhaya, A. (2024, October). Effects of Ni/Cu Bilayer Structure on The Optical and Electrical Characteristics of Al-Doped ZnO Thin-Film. In 2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-4). IEEE.

[C.5] Ouchen, R., Berghout, T., Djeffal, F., & Ferhati, H. (2024, October). Subthreshold Swing Performance Assessment of Nanoscale Junctionless GAA FETs using Machine Learning Approach. In 2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-4). IEEE.

[C.6] Ferhati, H., Djeffal, F., & Berghout, T. (2024, October). Steep Subthreshold Swing Nanoscale Tunnel FET Based on Silicon Tin Channel and High-k Dielectric Gate. In 2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-5). IEEE.

[C.7] Maoucha, A., Djeffal, F., & Ferhati, H. (2024, October). Optimization and Performance Enhancement of Lead-Free FASnI 3 Perovskite Solar Cells through Metaheuristic Methods. In 2024 International Conference on Advances in Electrical and Communication Technologies (ICAECOT) (pp. 1-4). IEEE.

[C.8] Khettache, L., Djeffal, F., & Ferhati, H. (2024, October). Optimal Speed Control of Dual-star Linear Induction Motor based on Particle Swarm Algorithm. In 2024 International Conference on Advances in Electrical and Communication Technologies (ICAECOT) (pp. 1-5). IEEE.

[C.9] Rahmani, I., Ferhati, H., Djeffal, F., & Dibi, Z. (2024, October). Subthreshold Performance Assessment of Nanoscale Negative Capacitance Junctionless GAA MOSFETs. In 2024 International Conference on Advances in Electrical and Communication Technologies (ICAECOT) (pp. 1-5). IEEE.

[C.10] Maoucha, A., Djeffal, F., Berghout, T., & Ferhati, H. (2023). Photoresponsivity Enhancement of SnS-Based Devices Using Machine Learning and SCAPS Simulations. Engineering Proceedings, 58(1), 128.

[C.11] Ferhati, H., Berghout, T., Benyahia, A., & Djeffal, F. (2023). Machine Learning DFT-Based Approach to Predict the Electrical Properties of Tin Oxide Materials. Engineering Proceedings, 58(1), 127.

[C.12] Zerroumda, B., Djeffal, F., & Ista, H. F. (2024, December). A Novle Junctionless 4H-SiC Trench MOSFET with Improved Switching and Self-Heating Performances. In 2024 1st International Conference on Electrical, Computer, Telecommunication and Energy Technologies (ECTE-Tech) (pp. 1-6). IEEE.

[C.13] Zerroumda, B., Ferhati, H., Djeffal, F., & Bendjerad, A. (2023, October). A New Gate-Trench Junctionless SiC Power MOSFET: Performance Assessement and Circuit Level Investigation. In 2023 20th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-5). IEEE.

[C.14] Maoucha, A., Djeffal, F., & Ferhati, H. (2023, October). Numerical investigation of a new double-absorber lead-free perovskite solar cell via SCAPS-1D. In 2023 20th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-5). IEEE.

[C.15] Ferhati, H., Kacha, K., Labchek, R., Dibi, K., & Djeffal, F. (2023, October). Performance assessment of a new optimized Junctionless SiSn MOSFET. In 2023 20th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-5). IEEE.

[C.16] Ferhati, H., Kacha, K., Bendjerad, A., Djeffal, F., & Benhaya, A. (2023, October). Optical and Electrical Properties of Annealed AZO/Ag/AZO Multilayer Deposited Using RF Sputtering Technique. In 2023 20th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE) (pp. 1-5). IEEE.

[C.17] Ferhati, H., & Djeffal, F. (2023, December). Novel SnS Absorber Film Based on Grooves and Au-Nanoparticles for Photovoltaic Applications. In 2023 IEEE 11th International Conference on Systems and Control (ICSC) (pp. 943-947). IEEE.

[C.18] Djeffal, F., & Ferhati, H. (2023, December). Structural and Electrical Properties of Ag/SnO 2 for Photovoltaic Applications. In 2023 IEEE 11th International Conference on Systems and Control (ICSC) (pp. 667-670). IEEE.

[C.19] Ferhati, H., Djeffal, F**,** New Ge-gate IR Phototransistor based on Doping Engineering Aspect: Photodetection Properties and Circuit Level Investigation, 2022 19th IEEE International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE), Mexico, 2022.

[C.20] H Ferhati, A Bendjerad, F Djeffal, A Benhaya, A Saidi, Effects of annealing on the structural and optical properties of sputtered SiC/Ag/SiC multilayer, 2022 19th IEEE International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE), Mexico, 2022.

[C.21] Ferhati, H., Djeffal, F**,** Numerical Investigation of a New GeSn MIR Phototransistor based on IGZO TFT Platform, 2022 19th IEEE International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE), Mexico, 2022.

[C.22] K Kacha, F Djeffal, A Bendjerad, H Ferhati, A Benhaya, Structural and Electrical Properties of a-Si Schottky Diode based on ZnO Top Layer and Ag Intermidiate Ultrathin-Films, 2022 36th IEEE Symposium on Microelectronics Technology (SBMICRO), 1-4.

[C.23] H Ferhati, K Kacha, A Bendjerad, F Djeffal, A Benhaya, Impact of RF Sputtering Power on the Structural and Electrical Properties of Amorphous AZO Thin─ Films, 2022 IEEE 21st international Ccnference on Sciences and Techniques of Automatic Control and Computer Engineering (STA), 2022.

[C.24] A Bendjerad, A Benhaya, F Smaili, F Djeffal, A Lahmar, H Ferhati, Effect of Thickness on the Hysteresis Cycles of Ni/NiO Multilayer Structure Prepared Using RF Sputtering

Technique, 2022 IEEE 21st international Ccnference on Sciences and Techniques of Automatic Control and Computer Engineering (STA), 2022.

[C.25] SE Farah, F Dieffal, Z Dibi, H Ferhati, Electrical and optical properties of Black Phosphorus under Strain effects: A First-principles Study, 2022 IEEE 19th International Multi-Conference on Systems, Signals & Devices (SSD), 2022.

[C.26] A Bendjerad, A Benhaya, H Ferhati, F Smaili, S Rahmani, F Djeffal, Magnetic properties of RF sputtered NbO-Ni and NiO-Nb multilayer thin films: Application of Preisach model, 2022 IEEE 19th International Multi-Conference on Systems, Signals & Devices (SSD), 2022.

[C.27] B Zerroumda, F Djeffal, S Benaggoune, H Ferhati, Investigation of a new power junctionless MOSFET using 2-D numerical simulation, 2022 IEEE 19th International Multi-Conference on Systems, Signals & Devices (SSD), 2022.

[C.28] F Djeffal, H Ferhati, A Benhaya, A Bendjerad, Enhanced Photoresponse of Ultraviolet Photodetector via RF Sputtered ZnO/a-SiC Heterostructure, 2022 IEEE 19th International Multi-Conference on Systems, Signals & Devices (SSD), 2022.

[C.29] F Djeffal**,** A Bendjerad, A Benhaya, H Ferhati, Elaboration of Graded Band-Gap a-SiC Thin-Film Using RF Magnetron Sputtering Technique**,** 2022 36th IEEE Symposium on Microelectronics Technology (SBMICRO), 1-4

[C.30] A Benyahia, F Djeffal, Z Dibi, H Ferhati, First-principles Study of the Electronic and Optical Properties of SnO2 Under Strain Effects, 2022 36th IEEE Symposium on Microelectronics Technology (SBMICRO), 1-5.

[C.31] Ferhati, H., Djeffal, F., Bendjrad, A., & Benhaya, A. (2021, July). Performance assessment of a new low-cost RF sputtered Schottky diode based on a-Si/Ti structure. In SMACD/ PRIME 2021; International Conference on SMACD and 16th Conference on PRIME (pp. 1-6). VDE, Germany.

[C.32] Ferhati, H., & Djeffal, F. (2021, July). Germanium–InGaZnO heterostructured thin-film phototransistor with high IR photoresponse. In SMACD/ PRIME 2021; International Conference on SMACD and 16th Conference on PRIME (pp. 1-6). VDE, Germany.

[C.33] Ferhati, H., Djeffal, F., & Bentrcia, T. (2020, December). Role of Material Gate Engineering in Improving Gate All Around Junctionless (GAAJL) MOSFET Reliability Against Hot-Carrier Effects. In 2020 32nd International Conference on Microelectronics (ICM) (pp. 1-4). IEEE, Jordan.

[C.34] Bentrcia, T., Djeffal, F., & Ferhati, H. (2020, June). An ANFIS-based Computation to Study the Degradation-related Ageing effects in Nanoscale GAA-TFETs. In Proceedings of the 10th International Conference on Information Systems and Technologies (pp. 1-5), Tunisia.

[C.35] Ferhati, H., Djeffal, F., & Bentrcia, T. (2020, June). Novel Infrared phototransistor based on Junctionless TFET design: Numerical Analysis and Performance Assessment. In Proceedings of the 10th International Conference on Information Systems and Technologies (pp. 1-5), Tunisia.

[C.36] T. Bentrcia, F. Djeffal, M. Chahdi, Performance evaluation of nanoscale halo dual-material double gate SiGe MOSFET using 2-D numerical simulation, Materials Today: Proceedings, vol. 20, Pages 348-355, 2020.

[C.37] H. Ferhati, F. Djeffal, Power efficiency enhancement in kesterite photovoltaic device by implementation of periodic grating nanowires, International Conference on Advanced Electrical Engineering 2019 (IEEE-ICAEE 2019) 19th to 21th November, 2019, Algiers, Algeria.

[C.38] H. Ferhati, F. Djeffal, A. Benhaya, Elaboration and characterization of a new Schottky diode based on ZnO/Ag/ZnO tri-layered structure, International Conference on Advanced Electrical Engineering 2019 (IEEE-ICAEE 2019) 19th to 21th November, 2019, Algiers, Algeria.

[C.39] B. Zerroumda, F. Djeffal, T. Bentrcia and H. Ferhati, Numerical Analysis of 4H-SiC MOSFET Design Including High-k Gate Dielectrics for Power electronic Applications, Proceedings of the 7th International Conference on Software Engineering and New Technologies, ACM, 18-21 December, Hamamat, 2018, Tunisia.

[C.40] E. Chebaki, F. Djeffal, T. Bentrcia and H. Ferhati, Device and Circuit Level Performance Analysis of a New Nanoscale DGJL MOSFET Design Using an Accurate Numerical Computation, Proceedings of the 7th International Conference on Software Engineering and New Technologies, ACM, 18-21 December, 2018, Hamamat, Tunisia.

[C.41] A. Kadri, F. Menacer and F. Djeffal, Simulation and analysis of Graphene-based nanoelectronic circuits using ANN method, NN 2017, 04-07 July, Thessaloniki, Greece.

[C.42] E. Chebaki, H. Ferhati, F. Djeffal, and T. Bentrcia, Numerical investigation of junctionless GAA MOSFET including degradation-related ageing effects, E-MRS Fall 2017, 18-21 September, Warsaw, Poland.

[C.43] A. Aouf, F. Djeffal, F. Douak, Thermal stability investigation of power GaN HEMT including self-heating effects, IEEE-ICSC 2017, May 8-10, 2017, Batna, Algeria.

[C.44] F. Menacer, A. Kadri, F. Djeffal, Z. Dibi, Modeling and investigation of smart capacitive pressure sensor using artificial neural networks, IEEE-ICSC 2017, May 8-10, 2017, Batna, Algeria.

[C.45] H. Ferhati, F. Djeffal, A. Benhaya, Enhanced performance of ZnO/c-Si solar cell using interface engineering with grooves morphology, IEEE-ICSC 2017, May 8-10, 2017, Batna, Algeria.

[C.46] N. Boukhenoufa, H. Ferhati, F. Djeffal, R. Mahamdi, Enhancement of the optical performance of ZnO thin-film using metallic nano-particles for optoelectronic applications, IEEE-STA 2016, December 19-22, 2017, Sousse, Tunisia.

[C.47] F. Menacer, A. Kadri, F. Djeffal, Z. Dibi, Modeling of boron nitride-based nanotube biological sensor using neural networks, IEEE-STA 2016, December 19-22, 2017, Sousse, Tunisia.

[C.48] M. Meguellati, F. Srairi, F. Djeffal, and L. Saidi, Control of a New Swimming Microrobot Design Using Flatness-ANFIS-Based Approach, in proceeding of World Congress on Engineering 2015, WCE 2015, July 1-3, 2015, London, U.K.

[C.49] K. Tamersit, F. Djeffal, and M. Meguellati, Numerical Modeling of a Deep Submicron Gas Sensor Based on Double-Gate Graphene Nanoribbon Field-Effect Transistor, in proceeding of World Congress on Engineering 2015, WCE 2015, July 1-3, 2015, London, U.K.

[C.50] T. Bentrcia, F. Djeffal, and M. Meguellati, Analytical Investigation of Swing Factor for Nanoscale Double Gate MOSFET Including Gate-work-function Effect, in proceeding of World Congress on Engineering 2015, WCE 2015, July 1-3, 2015, London, U.K.

[C.51] H. Ferhati, F. Djeffal, and D. Arar, "New phototransistor design to improve the optoelectronic performance using gate-engineering aspect,"16th international conference on Sciences and Techniques of Automatic control and computer engineering STA'2015, December 21-23, 2015, Monastir, Tunisia.

[C.52] K. Kacha, F. Djeffal, H. Ferhati, H. Bencherif and T. Bentrcia, "Investigation of GaAs/Si Solar cell with interfacial defects usingANFIS technique,"16th international conference on Sciences and Techniques of Automatic control and computer engineering STA'2015, December 21-23, 2015, Monastir, Tunisia.

[C.53] H. Ferhati, F. Djeffal, T. Bentrcia, " Investigation of analog/RF performance of gate-all-around junctionless MOSFET including interfacial defects,"4th International Conference on Electrical Engineering (ICEE'2015), April December 13-15, 2014, Boumerdes, Algeria.

[C.54] H. Ferhati, F. Djeffal, H. Bencherif, M. Meguellati, " Semi-analytical modeling and optimization of a: SiGe thin-film solar cell including multi-trench region,"3rd International Conference onControl, Engineering & Information Technology (CEIT'2015), 25-27 May, 2015, Tlemcen, Algeria.

[C.55] H. Bencherif, F. Djeffal, K. Kacha and D. Arar, "Analytical Investigation of SiGe Solar Cell Including Texture Morphology Effects,"4th International Conference on Systems and Control (ICSC'15), April 28-30, 2015, Sousse, Tunisia.

[C.56] H. Ferhati, F. Djeffal, K. Kacha, and D. Arar, "High Efficiency Amorphous Triple-Junction Thin-Film SiGe Solar Cells Incorporating Multi-Trench Region,"4th International Conference on Systems and Control (ICSC'15), April 28-30, 2015, Sousse, Tunisia.

[C.57] M. Meguellati, F. Srairi, F. Djeffal and L. Saidi, "Performance Analysis of Swimming Microrobot Using GA, ABC and PSO Based-optimization Techniques,"4th International Conference on Systems and Control (ICSC'15), April 28-30, 2015, Sousse, Tunisia.

[C.58] T. Bentrcia, F. Djeffal, D. Arar, and M. Meguellati, "Numerical Investigation of Nanoscale SiGe DG MOSFET with Graded Doping Channel for Improving Reliability Behavior,"15th international conference on Sciences and Techniques of Automatic control and computer engineering STA'2014, December 21-23, 2014, Hammamet, Tunisia.

[C.59] F. Srairi, M. Meguellati, F. Djeffal and L. Saidi, "Impact of Passive Links Configuration on Swimming Microrobot Behavior," 15th international conference on Sciences and Techniques of Automatic control and computer engineering STA'2014, December 21-23, 2014, Hammamet, Tunisia.

[C.60] K. Kacha, F. Djeffal, H. Ferhati, A. Benkouider, and I. Berbezier, "Multi-trench-based Technique to Improve Amorphous SiGe Thin-Film Solar Cell Performance," 15th international

conference on Sciences and Techniques of Automatic control and computer engineering STA'2014, December 21-23, 2014, Hammamet, Tunisia.

[C.61] M. Meguellati, F. Srairi, F. Djeffal, and L. Saidi, "Analytical Models and Optimization of Novel Swimming Microrobot Using ABC Computation for Biomedical Applications," 15th international conference on Sciences and Techniques of Automatic control and computer engineering STA'2014, December 21-23, 2014, Hammamet, Tunisia.

[C.62] F. Djeffal,K. Tamersit, and M. Meguellati, Analytical Analysis of a New Graphene-based Sensor for High-performance Biomolecule Sensing Applications, in proceeding of World Congress on Engineering 2014, WCE 2014, July 2-4, 2014, London, U.K.

[C.63] T. Bendib, L. Pancheri, F. Djeffal and G.-F. DallaBetta, Impact of temperature and doping concentration on the avalanche photodiode performances, in proceeding of World Congress on Engineering 2014, WCE 2014, July 2-4, 2014, London, U.K.

[C.64] F. Djeffal, T. Bentrcia, K. Kacha, I. Berbezier and M. Chahdi, Improving the Efficiency of Thin-film SiGe Solar Cells Through the Optimization of Intrinsic Layer Parameters, in proceeding of World Congress on Engineering 2014, WCE 2014, July 2-4, 2014, London, U.K.

[C.65] K. Kacha, F. Djeffal, T. Bentrcia, D. Arar , M. Meguellati and M. Chahdi, "Numerical investigation of the SiGe/Si heterostructure including Interfacial defects for photovoltaic applications", The 2013 2nd International Conference on Nano and Materials Science (ICNMS 2013), November 15-16, 2013, Abu Dhabi, UAE.

[C.66] N. Abdelmalek, F. Djeffal, M. Meguellatiand T. Bendib, "Numerical analysis of nanoscale junctionless MOSFET including effects of hot-carrier induced interface charges", The 2013 2nd International Conference on Nano and Materials Science (ICNMS 2013), November 15-16, 2013, Abu Dhabi, UAE.

[C.67] K. Kacha, F. Djeffal, B. Toufik and M. Meguellati, Equivalent Circuit Modeling of SiGe/Si solar cell including Interfacial defect effects, 14th international conference on Sciences and Techniques of Automatic control and computer engineering STA'2013, December 20-22, 2013, Sousse–Tunisia.

[C.68] T. Bentrcia, F. Djeffal and M. Meguellati, New submicron GAA RADFET design with Vacuum Kernel for high-performance radiation sensor applications, 14th international conference on Sciences and Techniques of Automatic control and computer engineering STA'2013, December 20-22, 2013, Sousse–Tunisia.

[C.69] F. Sriari, M. Meguellati, S. Lamir and F. Djeffal, Analytical modeling and optimization of new swimming microrobot design using genetic algorithm computations, 14th international conference on Sciences and Techniques of Automatic control and computer engineering STA'2013, December 20-22, 2013, Sousse–Tunisia.

[C.70] D. Arar, F. Djeffal, M. Meguellati and M. Chahdi, An optimized GSDG MOSFET design for nanoscale circuit applications, 5th International Conference on Modeling, Simulation and Applied Optimization (ICMSAO'13), April 28-30, 2013, Hammamet, Tunisia.

[C.71] N. Lakhdar, F. Djeffal, D. Arar, M. Meguellati, T. Bendib, An optimised submicron Dual-Material gate (DM) GaAs-MESFETs design to improve the analog performance using multi-objective computation , 5th International Conference on Modeling, Simulation and Applied Optimization (ICMSAO'13), April 28-30, 2013, Hammamet, Tunisia.

[C.72] K. Tamersit, F. Djeffal, D. Arar and M. Meguellati, Dual-Top-Gated Graphene field-effect transistors to improve the subthreshold swing for digital applications, 5th International Conference on Modeling, Simulation and Applied Optimization (ICMSAO'13), April 28-30, 2013, Hammamet, Tunisia.

[C.73] T. Bentrcia, F. Djeffal, D. Arar and M. Meguellati, ANFIS-based computation to study the nanoscale circuit including the hot-carrier and quantum confinement effects, 5th International Conference on Modeling, Simulation and Applied Optimization (ICMSAO'13), April 28-30, 2013, Hammamet, Tunisia.

[C.74] T. Bendib, F. Djeffal, D. Arar and M. Meguellati, Fuzzy-Logic-based Approach for Organic Solar Cell Parameters Extraction, accepted, World Congress on Engineering 2013, WCE 2013, July 3 -5, 2013, London, U.K.

[C.75] T. Bentrcia, F. Djeffal, M. Meguellati and D. Arar, New Approach Based on ANFIS Computation to Study the Threshold Voltage Behavior Including Trap Effects for Nanoscale DG MOSFETs, accepted, World Congress on Engineering 2013, WCE 2013, July 3 -5, 2013, London, U.K.

[C.76] K. Tamersit, F. Djeffal, D. Arar and M. Meguellati, Analytical Investigation of Subthreshold Swing to Study the Scaling Capability of Graphene Field- effect Transistors, accepted, World Congress On Engineering 2013, WCE 2013, July 3 -5, 2013, London, U.K.

[C.77] A. Maoucha, F. Djeffal, D. Arar, N. Lakhdar T. Bendib and M.A. Abdi, An accurate Organic solar cell parameters extraction approach based on the illuminated I–V characteristics for double diode modeling, First International Conference on Renewable Energies and VEhicular Technology, IEEE- REVET2012, Hammamet from 26 to 28 March 2012, Tunisia.

[C.78] T. bendib, F. Djeffal, A. Maoucha,M. Chahdi, A multi-objective optimization- based approach to improve the organic solar cell efficiency, First International Conference on Renewable Energies and VEhicular Technology, IEEE- REVET2012, Hammamet from 26 to 28 March 2012, Tunisia.

[C.79] F. Djeffal, T. Bendib, M. Meguellati, D. Arar and M.A Abdi, New Dual- Dielectric Gate All Around (DDGAA) RADFET Dosimeter Design to Improve the Radiation Sensitivity, Proceedings of the World Congress on Engineering 2012 Vol II, WCE 2012, July 4 - 6, 2012, London, U.K.

[C.80] T. Bendib, F. Djeffal, T. Bentrcia, D. Arar and N. Lakhdar, Multi-Objective Genetic Algorithms BasedApproach to Optimize the Small Signal Parameters of Gate Stack Double Gate MOSFET, Proceedings of the World Congress onEngineering 2012 Vol II, WCE 2012, July 4 - 6, 2012, London, U.K.

[C.81] T. Bendib, F. Djeffal, A. Maoucha, D. Arar and N. Lakhdar, A New Front Metal Grid Design Approach to Improve the Circular Solar Cell Efficiency Using Multiobjective Computation, Proceedings of the World Congress on Engineering 2012 Vol II, WCE 2012, July 4 - 6, 2012, London, U.K.

[C.82] F. Djeffal , A. Ferdi, D. Arar, M.A. Abdi and M. Chahdi, Fuzzy-Logic-Based Approach to Accurate Modeling of Double Gate MOSFET for Nanoelectronic Circuit Design, Proceedings of the World Congress on Engineering 2012, Vol II, WCE 2012, July 4 - 6, 2012, London, U.K.

[C.83] M. Meguellati, F. Djeffal, A. Kadri, L. Khettache and T. Bendib, A New RADFET dosimeter design for environment monitoring applications, The 24th IEEE-International Conference on Microelectronics, ICM-2012, December 17-20, 2012, Algiers, Algeria.

[C.84] T. Bentrcia, F. Djeffal, T. Bendib and E. Chebaaki, ANFIS-based approach to study the subthreshold swing behavior for nanoscale DG MOSFETs including the interface trap effect, The 24th IEEE-International Conference on Microelectronics, ICM-2012, December 17-20, 2012, Algiers, Algeria.

[C.85] A. Ferdi, F. Djeffal, D. Arar, M. Chahdi, A. Benhaya, Fuzzy-logic-based approach to study the electron mobility in nanoscale DG MOSFETs, EMCMRE-1, November 21-25, 2011, Marrakch, Morocco.

[C.86] M.A. Abdi, F. Djeffal, T. Bendib, M. Chahdi, A. Benhaya, compact charge model for ultra-thin nanoscale DG MOSFETs, EMCMRE-1, November 21-25, 2011, Marrakch, Morocco.

[C.87] N. Lakhdar, F. Djeffal and Z. Dibi, A new Dual-Material (DM) design to improve the subthreshold behavior of GaN-MESFETs, Symposium F. Group III nitrides and their heterostructures for electronics and photonics, E-MRS 2011, May 10-12, 2011, Nice, France.

[C.88] F. Djeffal, M. A. Abdi, Z. Dibi and D. Arar, An Analytical subthreshold-swing model including free carriers and interfacial traps effects for nanascale Double-Gate MOSFETs, Symposium I. Transport and photonics in Si-based nanomaterials and nanodevices, E-MRS 2011, May 10-12, 2011, Nice, France.

[C.89] N. Lakhdar, F. Djeffal and A. Benhaya, Optimisation du comportement sous-seuil d'un transistor double-grille GaN-MESFET fortement submicronique en utilisant les algorithmes génétiquess, International Conference on Systems and Information Processing ICSIP'11, May 15-17 2011, Guelma, Algeria

[C.90] T. Bendib, F. Djeffal, T. Bentrcia, M.A. Abdi and D. Arar, Multi-objective genetic algorithms based approach to optimize the Small signal parameters of Gate Stack Double Gate MOSFET, International Conference on Systems and Information Processing ICSIP'11, May 15-17 2011, Guelma, Algeria

[C.91] F. Kadri, S. Drid and F. Djeffal, Direct torque control of induction motor fed by three-level NPC Inverter using Fuzzy Logic, International Conference on Systems and Information Processing ICSIP'11, May 15-17 2011, Guelma, Algeria.

[C.92] N. Lakhdar, F. Djeffal, T. Bendib, A. Benhaya, Un modèle analytique permettant de décrire le comportement sous-seuil du transistor GCGS MOSFET nanométrique, The Inernational Conference on Electronics and Oil, ICEO'11, March 01-02, 2011, Ouargla, Algeria.

[C.93] N. Lakhdar, F. Djeffal, T. Bendib, A. Benhaya, Optimisation du comportement sous-seuil d'un transistor double-grille GaN-MESFET fortement submicronique en utilisant les Algorithmes génétiques, The Inernational Conference on Electronics and Oil, ICEO'11, March 01-02, 2011, Ouargla, Algeria.

[C.94] F. Djeffal, M.A. Abdi, D. Arar, T.Bendib, Surface- potential- based model to study the subthreshold swing behavior including hot-carrier effect for nanoscale GASGAA MOSFETs, IEEE International Conference on Design & Technology of Integrated Systems in Nanoscale Era, 22-25 March 2010,Hammamat, Tunisia.

[C.95] T. Bendib, F. Djeffal and M. A. Abdi, A new PSO-based approach to study the nanoscale DG MOSFETs, IEEE International Conference on Design & Technology of Integrated Systems in Nanoscale Era, 22-25 March 2010,Hammamat, Tunisia.

[C.96] M.A. Abdi, F.Djeffal, D. Arar and T. Bendib, An analytical subthreshold Swing model to study the scalability limits of double-gate MOSFETs including Bulk traps effects, IEEE International Conference on Design & Technology of Integrated Systems in Nanoscale Era, 22-25 March 2010, Hammamat, Tunisia.

[C.97] F. Kadri, S. Drid, D. Djerah, F. Djeffal, Direct torque control of induction motor fed by three phase PWM inverter using fuzzy logic and neural networks, 6th International Conference on Electrical Engineering, CEE'2010, Batna 11-13 October 2010, Algeria.

[C.98] T.Bentrcia, F.Djeffal, M.A. Abdi and D.Arar, A compact analytical current model including traps effects for GS DG MOSFETs, accepted for XIth International Workshop on Symbolic and Numerical Methods, Modeling and Applications to Circuit Design (SM2ACD), Tunis-Gammarth 05-06 October 2010, Tunisia.

[C.99] N.Lakhdar, F.Djeffal, M.A.Abdi and D.Arar, An analytical threshold voltage model to study the scaling capability of deep submicron double-gate GaN-MESFETs, accepted for XIth International Workshop on Symbolic and Numerical Methods, Modeling and Applications to Circuit Design (SM2ACD), Tunis-Gammarth, 05-06 October 2010,Tunisia.

[C.100] M.A. Abdi, F.Djeffal, T. Bentrcia and A.Benhaya, An analytical drain current model for GS GAA MOSFET including interfacial traps, accepted for XIth International Workshop on Symbolic and Numerical Methods, Modeling and Applications to Circuit Design (SM2ACD), Tunis-Gammarth 05-06 October 2010, Tunisia.

[C.101] Z. Dibi, F. Djeffal, A. Aouf and D. Arar, A new gate stack double diffusion MOSFET design to improve the electrical performances for power applications, 3rd International Conference on Nanostructures Self-Assembly NanoSEA 2010, Cassis, French Riviera, 28 June - 2 July 2010, France.

[C.102] M.A. Abdi, F. Djeffal, T. Bentrcia and D. Arar , An explicit Continuous analytical model for Gate All Around (GAA) MOSFETs including the hot- carrier degradation effects, 3rd International Conference on Nanostructures Self-Assembly NanoSEA 2010, Cassis, French Riviera, 28 June - 2 July 2010, France.

[C.103] M. A. Abdi, F. Djeffal, M. Meguellati, D. Arar, Two-Dimensional Analytical Threshold Voltage Model for Nanoscale Graded Channel Gate Stack DG MOSFETs, 16th IEEE International Conference on Electronics, Circuits, and Systems, ICECS 2009, Dec. 13-16, 2009 Hammamet, Tunisia.

[C.104] N. Abdelmalek, F. Djeffal, M.A. Abdi, N. Boukhennoufa and D. Arar, An accurate threshold voltage model for nanoscale GCGS VSG MOSFET, Third IEEE International Conference on Signals, Circuits and Systems (SCS'09), Nov. 6- 8, 2009 Djerba, Tunisia.

[C.105] T. Bentrcia, F. Djeffal, M.A. Abdi, N. Boukhennoufa and M. Chahdi, An accurate two dimensional threshold voltage model for nanoscale GCGS DG MOSFET including traps effects, Third IEEE International Conference on Signals, Circuits and Systems (SCS'09), Nov. 6- 8, 2009 Djerba, Tunisia.

[C.106] Boukhennoufa, K. Benmouhamed, M.A. Abdi, F. Djeffal, Wavelet-Based ECG signals compression using SPIHT technique and VKTP coder, Third IEEE International Conference on Signals, Circuits and Systems (SCS'09), Nov. 6- 8, 2009, Djerba, Tunisia.

[C.107] T. Bendib, F. Djeffal, M. A. Abdi, D. Arar, An Analytical analysis of the sensitivity behaviour for deep submicron ISFET sensors, Third International Conference Electrical Engineering Design, ICEEDT09, Oct. 31- Nov. 02, 2009 Sousse, Tunisia.

[C.108] N. Lakhdar, F. Djeffal, Parameters determination of electron mobility model in 4H-SiC using particle swarm Computation, International Conference on Electrical Engineering 05 - 07 December 2009, Boumerdes, Algeria.

[C.109] T. Bentrcia, F. Djeffal and D. Arar, An Analytical Two Dimensional Subthreshold Current Model for Nanoscale GCGS DG MOSFET including Interfacial Traps Effects, Second International Conference on Electronics Systems, CISE'09, Oct. 25- 26, 2009 Batna, Algeria.

[C.110] M. Meguellati, F. Djeffal and D. Arar, , A novel multigate design to improve the sensitivity behavior for deep submicron ISFET-based sensors, Second International Conference on Electronics Systems, CISE'09, Oct. 25- 26, 2009 Batna, Algeria.

[C.111] T. Bendib, F.Djeffal and A.Benhaya, PSO-based approach to study the nanoscale DG MOSFETs, Second International Conference on Electronics Systems, CISE'09, Oct. 25- 26, 2009 Batna, Algeria.

[C.112] A. E. Aouf, F. Djeffal and Z. Dibi, A Surface-potential-based model to study the self-heating effect on the scalability of LD MOSFET based power Devices, Second International Conference on Electronics Systems, CISE'09, Oct. 25- 26, 2009 Batna, Algeria.

[C.113] F.Djeffal, M.A.Abdi and D. Arar, An analytical subthreshold current model for nanoscale GAA MOSFET including interfacial hot-carrier effects, Second International Conference on Electronics Systems, CISE'09, Oct. 25- 26, 2009 Batna, Algeria.

[C.114] N. Lakhdar and F. Djeffal, A PSO-based analytical approach to study the electron mobility in 4H-Si, Second International Conference on Electronics Systems, CISE'09, Oct. 25- 26, 2009 Batna, Algeria.

[C.115] M. A. Abdi, F. Djeffal, Z. Dibi and D. Arar, A two-dimensional analytical subthreshold behavior analysis including hot-carrier effect for nanoscale Gate Stack Gate All Around (GASGAA) MOSFETs, Symposium on Silicon and Germanium issues for future CMOS devices E-MRS 2009, June 8-12, 2009, Strasbourg, France.

[C.116] Z. Ghoggali, F. Djeffal, M. A. Abdi, D. Arar, N.Lakhdar and T.Bendib, An analytical threshold voltage model for nanoscale GAA MOSFETs including effects of hot-carrier induced interface charges, The 3rd IEEE International Design and Test Workshop IDT08, December 20-22, 2008, Monastir, Tunisia

[C.117] M.A. Abdi, F. Djeffal, N. Lakhdar, T. Bendib, F. Meddour, An optimized analytical electron mobility model based on genetic algorithm computation to study the GaN-based MOSFETs, The 2nd IEEE International Conference on Signals, Circuits and Systms SCS2008, November 7-9, 2008, Hammamet, Tunisia.

[C.118] F. Djeffal, D.Arar, Z. Dibi, M.A Abdi, Tow dimensional analytical subthreshold swing model for nanoscale double gate MOSFETs with bulk trap states, Symposium on Advanced silicon materials research for electronic and photovoltaic applications E-MRS 2008, May 26-30, 2008, Strasbourg, France.

[C.119] F. Djeffal, D.Arar, Z. Dibi, N. Lakhdar, An approach based on particle swarm computation to study the electron mobility in wurtzite GaN, Symposium on Wide band gap semiconductor nanostructures for optoelectronic applications E-MRS 2008, May 26-30, 2008, Strasbourg, France.

[C.120] D. Arar, Z. Dibi, F. Djeffal, T. Bendib, Genetic algorithm computation to study the nanoscale double-gate MOSFET, The 3rd International Symposium on Molecular Materials MOLMAT2008, July 8-11, 2008, Toulouse, France.

[C.121] F. Djeffal, T. Bendib, M. Abdi, D. Arar, An analytical electron mobility model based on particle swarm computation for silicon-based devices, International Conference on Materials Discovery and Databases DFT ICKKD2008, October 11-13, 2008, Oran, Algeria (to appear in J. Comput. Theor. Nanoscien).

[C.122] F. Djeffal, T. Bendib, M. Abdi, D. Arar, An accurate analytical model based on particle swarm computation for nanoscale DG MOSFETs, International Conference on Materials Discovery and Databases DFT ICKKD2008, October 11-13, 2008, Oran, Algeria (to appear in J. Comput. Theor. Nanoscien).

[C.123] F. Djeffal, M.A. Abdi, M. Meguellati, R. Benzid, T.bendib, An accurate low-field mobility model based on particle swarm computation for wurtzite GaN-based devices, 1st International Workshp on Renewable Energies and their Applications 1WIERA'2008, May 10-12, 2008, Laghouat, Algeria.

[C.124] R. Mahamdi, S. Torche, F. Djeffal, Neural network-based approach to modelling ISFETs in PSPICE simulation, 6ème Journées Maghreb-Europe sur les Matériaux et leurs Applications aux Dispositifs et Capteurs MADICA 2008, 30 Octobre -1 Novembre 2008, Rabat, Maroc (to appear in Sensor Letters).

[C.125] M.A. Abdi, F. Djeffal, M.L. Hafiane, D. Arar, Numerical Analysis of Double-Gate and GAA MOSFETs with trap states, 12th International Conference on defects, Reliability and Image Processing DRIP2007, September 9-13, 2007, Berlin, Germany.

[C.126] F. Djeffal, D. Arar, T. Bendib, M.A. Abdi, Une approche neuronale permettant d'étudier les systèmes photovoltaïques dans un environnement spatial, International Conference of Renewable Energies ICRE'07, November 25-27, 2007, Bejaia, Algeria.

[C.127] T. Bendib, F. Djeffal, B. Barakat, N.Hamia, N. Abelmalek, Commande automatique d'un système de poursuite solaire à deux axes à base de microcontrôleur Pic 16F84A, International Conference of Renewable Energies ICRE'07, November 25-27, 2007, Bejaia, Algeria.

[C.128] F. Djeffal, A. Abdi, M. Chahdi, A. Benhaya. A neural approach to study the scaling capability of the undoped Double-Gate and cylindrical Gate All around MOSFETs, Symposium on Nanostructures based on group IV and Organic semiconductors E-MRS 2007, 27-June 1, 2007, Strasbourg, FRANCE.

[C.129] F. Djeffal, A.Benhaya, M. Chahdi, Modélisation Neuronale des Coefficients de Transport des Porteurs de Charge dans le Silicium Cristallin, International Congress on Renewable Energies and Development ICRESD_07, May 21-27, 2007, Tlemcen, Ageria.

[C.130] B. Barkat, F.Djeffal, N. Abdelmalek, Conception d'un nouveau système de poursuite solaire à deux axes à commande hydraulique, les Journées d'Etudes Nationales de Mécanique JENM2007, Novembre 19-20, 2007, Batna, Algérie.

[C.131] F.Djeffal, Z.Dibi, M.L.Hafiane, D.Arar, Design and simulation of a nanoelectronic DG MOSFET current source using artificial neural networks, Symposium on Current trends in nanosciences from materials to applications E-MRS 2006, 28-June 2, 2006, Nice, France.

[C.132] F.Djeffal, S.Guessasma, A.Benhaya, M. Chahdi , Study the scaling capability of the DG MOSFET using Artificial Neural Network, Symposium on Current trends in nanosciences from materials to applications EMRS 2005, 28-June 2, 2006, Strasbourg, France.

[C.133] M. Meguellati, F.Djeffal, A.Benhaya, M. Chahdi, Un modèle semi-analytique pour étudier l'effet des paramètres du transistor Double-Gate MOSFET nanométrique sur le courant sous seuil, 1st International Conference on Nanomaterials and Applications INCONA2005, November19-21, 2005, Annaba, Ageria.

[C.134] F.Djeffal, A.Benhaya, M.Chahdi, Modelling and simulation of nanoscale CMOS circuits using artificial neural network, International Conference on Electronics Systems CISE'05, December 13-14, 2005, Batna, Algeria.

[C.135] F.Djeffal, M. Chahdi, A.Benhaya, Un prédicteur à base des RNAs permettant l'estimation de la dégradation des transistors MOSFETs fortement submicroniques, International Conference on Electronics Systems CISE'05, December 13-14, 2005, Batna, Algeria.

[C.136] F.Djeffal, A.Benhaya, M. Chahdi, Modélisation semianalytique du transistor DG MOSFET symétrique fortement submicronique, Conférence Maghrébine en Génie Electrique CMGE'2004, 12-13 Avril, 2004, Constantine, Algeria.

[C.137] F.Djeffal, A.Benhaya, M.Chahdi, Un dispositif expérimental assisté par ordinateur permettant l'étude de la dégradation des transistors MOSFETs Submicroniques, International Congress of Electrical Engineering CIGE2004, Octobre 4-7, 2004, Sétif, Algeria.

[C.138] M. Auadj, F. Naceri, N. Slimani, F.Djeffal, Un système d'acquisition de données et de télécontrole SCADA: Application pour la modélisation et l'optimisation du réseau de collectes de Hassi-Messaoud, 2nd International Symposium on Hydrorbons & Chemistry ISHC'02, Marsh 21-23, 2004, Ghardaïa, Algeria.

[C.139] F. Djeffal, A.Benhaya, M. Chahdi, Modélisation semianalytique desparamètres des transport dans les matériaux optoélectroniques, First National of Electronic PCE'04, April 17-15, 2004, Bordj Bou Arréridj, Algeria.

[C.140] F.Djeffal, A.Benhaya, M.Chahdi, Modélisation numérique du transistor DGMOSFET fortement submicronique, Edward A.Bouchet International Conference on Physics and high Technology EBIC'05, August 11-15, 2003, Hammamet, TUNISIA.

[C.141] F.Djeffal, A.Benhaya, M.Chahdi, Un dispositif expérimental assisté par PC permettant l'étude du transport des porteurs majoritaires dans les semiconducteurs, International Congress on Photovoltaic and Wind Energies ICPWE'2003, December 20-22, 2003, Tlemcen, Algeria.

[C.142] F.Djeffal, A.Benhaya, M.Chahdi, Une approche analytique pour étudier l'effet de température, des impuretés et du champ électrique sur les coefficients de transport dans le silicium cristallin, Conférence Internationale sur la Physique et ces Applications CIPA'2003, 08-10 Décembre, 2003, Oran, Algérie.

[C.143] F.Djeffal, A.Benhaya, M.Chahdi, Un dispositif expérimental permettant d'étudier les coefficients de transport des porteurs minoritaires dans le silicium cristallin, International Conference of Materials Sciences and Engineering ICMSE-1, May 5-7, 2003, M'sila, Algeria.

[C.144] F.Djeffal, A.Benhaya, M. Chahdi, Un modèle analytique permettant l'étude del'effet de la température, des impuretés et du champ électrique sur la mobilité électrique dans l'arséniure

de gallium, Congrès National de la Phasique et de ces Applications CNPA'2002, 28-30 Octobre, 2002, Batna, Algérie.

[C.145] F.Djeffal, A.Benhaya, M.Chahdi, A refined measurement scheme based on programmable electronic to study transport properties in semiconductors devices, First International Conference on Microelectronics ACM'02, October 13-15, 2002, Algiers, Algeria.