

Institutia: Institutul National de Cercetare-Dezvoltare pentru Microtehnologie (IMT-Bucuresti)

Functia: Cercetator Stiintific gradul 3

1. Nume: Buiu

2. Prenume: Octavian

3. Data și locul nașterii: 10.01.1963, Bucuresti, Romania

4. Cetățenie: Romana

5. Stare civilă: Necasatorit

6. Studii:

Instituția	Perioada	Grade sau diplome obținute
Liceul de matematica fizica „Nicolae Balcescu”, Bucuresti	1977 - 1981	Diploma bacalaureat
Universitatea din Bucuresti, Facultatea de Fizica, Sectia Fizica Tehnologica	1982 - 1987	Diploma Inginer Fizician, specialitatea Materiale si Combustibili Nucleari
Universitatea „Babes- Bolyai” Cluj, Facultatea de Fizica	1993-1999	Diploma Doctor, Specializarea Fizica Atomului si Moleculei

7. Experiența profesională:

Instit	Perioada	Funcția	Descriere
Honeywell Romania SRL, Bucuresti	12/2014 – 01/2017	Senior Technology Manager	Manager grup „Cercetare Avansata”, Safety and Productivity Solutions
Honeywell Romania SRL, Bucuresti	08/2007 – 12/2014	Portfolio Manager	Coordonator manageri de proiect, dezvoltare portofolio de proiecte, dezvoltare IP; transfer tehnologie catre business
Universitatea din Liverpool, Departamentul de Inginerie Electrica si Electronica	02/2001 – 08/2007	Senior Lecturer (conferentiar)	Coordonator curs Master Echipamente Electronice pentru Medicina; titular cursuri: „Computer Networks”; „Tehnologie Microelectronica”; titular laborator „Design of Electronic Circuits”; membru grup de cercetare „Solid State Electronics”. Responsbil laborator caracterizare optica materiale pentru microelectronica
Universitatea din Liverpool, Departamentul de Inginerie Electrica si Electronica	01/2000- 02/2001	Research Associate (Cercetator Stiintific)	Membru in grupul de cercetare Solid State Electronics; grant cercetare” “Design and simulation of a Vertical MOS transistor; electrical and optical characterization of very thin silicon dioxide films”

Emerging Technologies Research Center, DeMontford University, Leicester, United Kingdom	01/2000-10/2000	Research Fellow	Research on EPSRC and Department of Trade and Industry (DTI) Research Grant “Development of low temperature LPCVD processes for thin films transistors based technologies”:
Universitatea din Liverpool, Departamentul de Inginerie Electrica si Electronica	05/1997 – 01/2000	Research Assistant	Cercetator stiintific grant UK “Reliability of sub-micron MOSFET transistors; development and the use of 3-level charge pumping technology for reliability estimation”; modelare / simulare folosind Silvaco .
Insitulul de Microtehnologie (IMT) , Bucuresti	1994-1997	Director Stiintific	Co-ordonarea laboratoarelor de cercetare (40+ oameni) si a proiectelor executate.
Insitulul de Microtehnologie (IMT) , Bucuresti	1992-1994	Cercetator Stiintific 3, Sef laborator Caracterizare Microfizica	Dezvoltare tehnicilor de microscopie de forat atomica si a celor de optica neliniara (Raman, armonica a doua)
Institutul de Cercetari Componente Electronice (ICCE)	1990 - 1992	Cercetator Stiintific, Laborator Fiabilitate.	Dezvoltare metode si sisteme de caracterizare optice pentru materiale si procese folosite in industria microelectronica; Efectuare teste de fiabilitate; preluare date experimentale
Institutul de Reactori Nucleari Energetici (IRNE), Mioveni, Jud. Arges, Romania	1987 - 1990	Inginer Stagiar	Dezvoltare metode de control nedistructiv (ultrasonic, Emisie acustica) pentru control elemente metalice folosite in producere fascicule combustibili nucleari

8. Limbi străine cunoscute: engleza (avansat), franceza (incepator)

9. Competențe:

- Experimentale: proiectare experimente; caracterizarea functional a si a fiabilitatii senzorilor; caracterizarea microfizica a materialelor; proiectare senzori si arhitecturi system
- Software: SILVACO, Cadence – modelare si simulare procese tehnologice, dispozitive si circuite electronice; Analiza Statistica, Management de Proiect si Portofolio, Office 365, Brainstorming (Simple Mind)
- Marketing: evaluare pietei, dezvoltare roadmaps, Voice of Customer (VOC) si Observational Voice of Customer (OVOC)

10. Alte specializări și calificări:

- „Design for Six Sigma”, Green Belt (Honeywell International Inc., USA)
- Chartered Scientist si Chartered Physicist – Institute of Physics (IoP), Londra, UK

11. Experiența acumulată în alte programe/proiecte naționale/internaționale:

Programul/Proiectul	Funcția	Perioada	Bugetul administrat
“Novocell – Celula Fotovoltaica cu cromofor organic Hyperpolarizabil” (ID 608), POS Creșterea Competitivității Economice, Axa Prioritară 2 – Creșterea Competitivității prin CDI	Manager de Proiect	2011-2014	180000 USD
SOIHITS - - Smart Silicon-on-Insulator Sensing Systems operating at high temperature”, proiect finanțat prin programul EU FP7 – ICT	Manager Exploatare	2011 - 2015	280000 EURO
„Fiabilitate baterii Li-Ion pentru mașini cu propulsie hibridă”, proiect finanțat de Agenția de Cercetare din Cehia	Manager de proiect	2014-2017	200000 USD

12. Alte mențiuni:-

Declar pe proprie răspundere că datele prezentate sunt în conformitate cu realitatea.

Data completării:

Semnatura

Lista lucrari

Granted Patents and Patent Applications

2016

- [1] Bogdan –Catalin Serban, Cristian Diaconu, Mihai Mihaila, Octavian Buiu, **”Dye-sensitized solar cells and methods of making same”** European Granted patent EP2838128 B1, 2016- 01-06
- [2] Bogdan –Catalin Serban, Mihai Mihaila, Cristian Diaconu, Octavian Buiu, **”Dye-sensitized solar cells and methods of making same”** European Granted patent EP2 730 622 B1, 03.02. 2016
- [3] Serban Bogdan- Catalin, Octavian Buiu, Cornel Cobianu, Brezeanu Mihai, **”Hydrogen sulfide sensor and method”**, EP 2966034A1, 2016-01-13,
- [4] Bogdan-Catalin Serban, Octavian Buiu, Cornel Cobianu, Mihai Brezeanu, **”Hydrogen sulfide sensor and method”**, US 2016/0011142 A1, Jan 14, 2016
- [5] Cornel Cobianu, Bogdan-Catalin Serban, Alisa Stratulat, Viorel Georgel Dumitru, Mihai Brezeanu, Octavian Buiu, **”Method and system for flammable gas detection”**, US2016/0038908 A1, Feb.11, 2016
- [6] Cornel Cobianu, Serban Bogdan-Catalin, Alisa Stratulat, Dumitru Viorel-Georgel, Mihai Brezeanu, Octavian Buiu, **”Method and system for flammable gas detection”** EP 2 982 650 A1, 10.02 2016
- [7] Cornel Cobianu, Viorel-Georgel Dumitru, Bogdan-Catalin Serban, Alisa Stratulat, Mihai Brezeanu, Octavian Buiu, **”Metal oxide nanocomposites heterostructures methods and hydrogen sulfide sensors including the same”**, US 2016/0011161 A1, Jan.14, 2016
- [8] Cornel Cobianu, Viorel-Georgel Dumitru, Bogdan-Catalin Serban, Alisa Stratulat, Mihai Brezeanu, Octavian Buiu, **”Metal oxide nanocomposites heterostructures methods and hydrogen sulfide sensors including the same”**, EP 2 966 033 A1, Jan.13, 2016
- [9] Mihai Brezeanu, Serban Bogdan-Catalin, Dumitru Viorel- Georgel, Octavian Buiu, **”Method and system for diamond –based oxygen sensor”**, European patent Application, EP 2 990 785 A1, 02 03 2016
- [10] Mihai Brezeanu, Serban Catalin Bogdan-, Dumitru Viorel- Georgel, Octavian Buiu, **”Method and system for diamond- based oxygen sensor”**, US 0056239 A1, Feb. 25, 2016
- [11] Mihai Brezeanu, Serban Bogdan-Catalin, Dumitru Viorel- Georgel, Octavian Buiu, **”CO2 sensor based on diamond filed effect transistor”**, US Patent No 9, 291, 594, B2, March 22, 2016
- [12] M. Brezeanu, Bogdan-Catalin Serban, Viorel- Georgel Dumitru, Octavian Buiu, **”Method and system for diamond- based oxygen sensor”**, US Patent No 9, 349, 801 B2, May 24, 2016
- [13] Bogdan Serban, Octavian Buiu, Mihai Brezeanu, Cornel Cobianu, Bostan Cazimir Gabriel, Diaconu Cristian, **”Benzene sensor and associated method”**, WO 2016/081241 A1, 26 May 2016
- [14] Cornel Cobianu, Serban Bogdan, Bostan Cazimir, Costea Stefan, Buiu Octavian, Stratulat Alisa, Brezeanu Mihai, **”Humidity sensor”**, United States Patent Application 20160202201A1, July 14, 2016
- [15] Cornel Cobianu, Serban Bogdan, Bostan Cazimir, Costea Stefan, Buiu Octavian, Stratulat Alisa, Brezeanu Mihai, **”A humidity sensor”**, European Patent Application, EP3043173A1, July 13, 2016
- [16] Cornel Cobianu, Stratulat Alisa, Serban Bogdan, Bostan Cazimir, Buiu Octavian, Brezeanu Mihai, **”Humidity sensing system”**, WIPO/PCT, WO2016102028A1, June, 30, 2016

[17] Serban Bogdan, Buiu Octavian, Cornel Cobianu, Brezeanu Mihai, **“Hydrogen sulfide sensor”**, EP 2 966 034 B1, 31.08.2016

[18] Mihai Brezeanu, Serban Bogdan, Viorel-Georgel Dumitru, Buiu Octavian, **“Method and system for diamond – based oxygen sensor”**, US 2016/0238552 A1, 18 august 2016

[29] Cornel Cobianu, Dumitru Viorel-Georgel, Serban Bogdan, Stratulat Alisa, Brezeanu Mihai, Buiu Octavian, **“Methods for forming metal oxide nanocomposite heterostructures and for fabricating hydrogen sulfide sensors including the same”**, EP 2 966 033 B1, 2016

[20] M. Brezeanu, B.C Serban, V-G Dumitru, O. Buiu, **“Method and system for diamond –based oxygen sensor”**, EP 2 990 785 B1, 05 10-2016

[21] Bogdan- Catalin Serban, C.Cobianu, M. Brezeanu, O.Buiu, C G Bostan, Alisa Stratulat, **“Relative humidity sensor and method”**, EP 3 078 964 A1, 12 10 2016

[22] Bogdan- Catalin Serban, C.Cobianu, M. Brezeanu, O.Buiu, C G Bostan, Alisa Stratulat, **“Relative humidity sensor and method”**, US Patent Application 0299095A1, 13 10 2016

2015

[23] Serban, Bogdan-Catalin | Cobianu, Cornel P. | Brezeanu, Mihai | Avramescu, VIOREL | Buiu, Octavian | Dumitru, Viorel Georgel | Mihaila, Mihai N. | Bostan, Cazimir G. , **“Sensing layers for oxygen detection”**, European Patent EP2848927B1, 09.09.2015

[24] Serban, Bogdan Catalin | Brezeanu, Mihai | Cobianu, Cornel P. | Buiu, Octavian | Mihaila, Mihai N. | Diaconu, Cristian, **“Colorimetric gas sensing layer, system, and method of making the same”**, European Patent Application EP2884274A1, 17.06.2015

[25] Cobianu, Cornel P. | Serban, Bogdan-Catalin | Brezeanu, Mihai | Buiu, Octavian | Bostan, Cazimir G., **“Sonochemical synthesis of iron doped strontium titanate powder”**, European Patent Application EP2848589A1, 18.03.2015

2014

[26] Serban, Bogdan - Catalin, Mihaila, Mihai N., Buiu, Octavian, **“Fluorescence quenching based oxygen sensor”**, European Patent Application EP2461154 and United States Patent 8,747,750/10.06.2014

[27] Serban, Bogdan, Mihaila, Mihai N., Cobianu, Cornel, Dumitru, Viorel Georgel, Buiu, Octavian **“Carbon Dioxide Sensor”**, United States Patent US8826724B2, 09.09.2014

[28] Serban, Bogdan Catalin, Mihaila, Mihai N., Buiu, Octavian **“Fluorescent polymers for Oxygen Sensing”**, United States Patent US8778501B2, 15.07.2014

[29] Mihaila, Mihai N. | Serban, Bogdan Catalin | Buiu, Octavian | Avramescu, Viorel, **“Dye sensitized solar cells and methods of making same”**, European Patent Application 22.10.2014

[30] Serban, Bogdan-Catalin | Buiu, Octavian | Brezeanu, Mihai | Cobianu, Cornel | Diaconu, Cristian **“Chlorophyll-based sensors for mineral and organic acids”**, European Patent Application EP2806268A1, 26.11.2016

[31] Serban, Bogdan, Catalin | Buiu, Octavian | Diaconu, Cristian | Bostan, Cazimir, Gabriel, **“Dye-sensitized solar cells and methods of making same”**, European Patent Application EP2730623A1, 14.05.2014

2013

[32] Serban, Bogdan Catalin, Mihaila, Mihai N., Buiu, Octavian, **“Fluorescent polymers for oxygen sensing”**, United States Patent Application 20120141807; European Granted Patent 2 461 155 B1 / 13.03.2013;

[33] Serban, Bogdan Catalin, Mihaila, Mihai N., Buiu, Octavian, **“Composition and method for preparing a fluorescence quenching based oxygen sensor comprising the composition”**; European Granted Patent EP 2. 461 154 B1 / 13. 03. 2013

[34] Serban, Bogdan-Catalin, Cobianu, Cornel P., Mihaila, Mihai N., Dumitru, Viorel Georgel, Buiu, Octavian, **“Differential resonators for NO₂ detection and methods related thereto”**, European Patent Application EP2333531 and United States Patent 8,563,319 / 22.10.2013

[35] Serban, Bogdan – Catalin, Mihaila, Mihai N., Buiu, Octavian, Costea, Stefan Dan, **“Oxygen sensors based on hard-soft acid-base relationships”**, European Patent Application EP2610609, 03.07.2013

[36] Brezeanu, Mihai; Dumitru, Viorel Georgel; Georgescu, Ion; Costea, Stefan Dan; Buiu, Octavian, **“PRESSURE SENSORS AND METHODS OF SENSING PRESSURE”**, European Patent Application EP2597442A1, 29.05.2013

2012

[37] Serban, Bogdan - Catalin, Mihaila, Mihai N., Costea, Stefan Dan, , Buiu, Octavian, **“Quantum Dot Solar Cell”**, United States Patent 8,227,687 / 25.07.2012.

[38] Avramescu, Viorel, Le Moing, Christophe, Gierczak, Marek, Schweizer, Pascal, Buiu, Octavian, **“DETECTING ETHANOL AND WATER CONCENTRATIONS IN FUEL”**, US Patent Application US20120223515A1, 06.09.2012

Contributions in Books

[1] Andrea De Luca, F. Udrea, Guoli Li, Y. Zeng, N. André, Guillaume Pollissard-Quatremère, Laurent A. Francis, D. Flandre, Z. Racz, Julian W. Gardner, Shan Zee Ali, Octavian Buiu, Bogdan C. Serban, Cornel Cobianu and T. Wotherspoon, **“Sensors and Sensor Systems for Harsh Environment Applications”**, Book chapter in *Semiconductor Devices in Harsh Conditions* (Eds.: Kirsten Weide-Zaage, Malgorzata Chrzanowska-Jeske) November 21, 2016 by CRC Press, ISBN 9781498743808 - CAT# K26860

[2] C. Cobianu, B. Serban, M. Brezeanu, O. Buiu, A. Stratulat, S. Costea, V. Dumitru, **“Hydrogen sulphide sensing review”**, published in the *Annals of the Academy of Romanian Scientists, Series on Science and Technology of Information*, Vol.7, Number 1/2014, pp 55-67

[3] C. Cobianu, B. Serban, M. Brezeanu, V. Dumitru, C. Bostan, O. Buiu, **“Oxygen sensing: A Review. Part 2: Solid State Technologies”**, published in the *Annals of the Academy of Romanian Scientists, Series on Science and Technology of Information*, vol. 7 (2), pp. 5 – 20, 2014. ISSN 2066-8562.

[4] B. Serban, C. Cobianu, M. Brezeanu, O. Buiu, **“Quantum dot solar cell. An HSAB perspective”**, published in the *Annals of the Academy of Romanian Scientists, Series on Science and Technology of Information*, vol. 6 (1), pp. 7 – 15; ISSN 2066-2742; 2013

[5] Bogdan-Catalin Serban, C. Cobianu, O. Buiu, **“Materials and methods for optical and galvanic lead – free oxygen detection”**, *Oxygen sensing: a review Part 1*, *Annals of the Academy of Romanian Scientists, Online Edition Series on Science and Technology of Information* ISSN 2066 - 2742 Volume 6, , pp. pp. 43-54, 2013

[6] Cornel Cobianu, Cazimir Bostan, Ioan Pavelescu, Ion Georgescu, Ștefan Costea, Vlad Olaru, Andrei Balan, Anca Vasilevici, Octavian Buiu, **“FROM 2D MICROELECTRONICS TO 3D MI-CROSYSTEMS”**, *Annals of*

the Academy of Romanian Scientists, Series on Science and Technology of Information, ISSN 2066-8562 Volume 3, Number 1/2010, pp. 31-46.

[7] Hakim, M.M.A., Uchino, T.R., White, W., Ashburn, P., Tan, L., Buiu, O., Hall, S., "Improved sub-threshold slope in RF vertical MOSFETS using a frame gate architecture", *Solid-State Device Research Conference, 2008. ESSDERC 2008. 38th European, 15-19 Sept. 2008, Edinburgh, pp. 95 – 98, ISSN: 1930-8876*

[8] O. Buiu, S. Hall, I. Z. Mitrovic, Y. Lu, W. M. Davey, "High-k dielectric stacks for nanoscaled SOI devices", *NATO Security through Science Series C: Environmental Security, pp. 33-58, 2007 (Springer), ISSN: 1874-6519*

[9] Mitrovic, I.Z., El Mubarek, H.A.W., Buiu, O., Hall, S., Ashburn, P., Zhang, J., "SiGeC HBTs: im-pact of C on device performance", *NATO Security through Science Series C: Environmental Security, pp. 171-178, 2007 (Springer), ISSN: 1874-6519*

[10] S. Hall, O. Buiu, I.Z. Mitrovic, H.A.W. El Mubarek, P. Ashburn, M. Bain, H.S. Gamble, Y. Wang, P.L.F. Hemment and J. Zhang: "SiGe Heterojunction bipolar transistors on insulating sub-strates", in Proceed. Of the NATO Advanced Research Workshop "Science and Technology of Semiconductor-on-insulator Structures and Devices Operating in a Harsh Environment", Kyiv, Ukraine, 25 – 30 April 2004; *Series: NATO Science Series II: Mathematics, Physics and Chemistry, Vol 185 , Flandre, Denis; Nazarov, Alexei N.; Hemment, Peter L.F. (Eds.), 2005, XII, 348 p., Softcover, ISBN: 1-4020-3012-6*

[11] M. Kolar, O. Buiu, "CFD simulation of an unsteady non – newtonian blood flow and its effects on integrity of stent grafts for abdominal aortic aneurysm repair", oral presentation at the 3rd European Medical & Biological Engineering Conference – EMBEC 2005, November 20 – 25, Prague (Czech Republic); *IFMBE Proceedings EMBEC'05 of the "3rd European Medical & Bio-logical Engineering Conference, IFMBE European Conference on Biomedical Engineering", Hozman J., Kneppo P. (Editors) Vol. 11, 2005, Prague, Czech Republic, CD (ISSN 1727-1983.)*

[12] N. Lukyanchikova, N. Garbar, A. Smolanka, M. Lokshin, S. Hall, O. Buiu, I. Z. Mitrovic, H. A. W. Mubarek, P. Ashburn, "Low-Frequency Noise in SOI SiGe HBTs Made by Selective Growth of the Si Collector and Non-Selective growth of SiGe base", oral presentation at the 18th Inter-national Conference on Noise and Fluctuations, September 19-23, 2005, Salamanca, Spain; published in *Proceed. of the 18th International Conference on Noise and Fluctuations, pp. 265 – 269, September 19-23, 2005, Salamanca, Spain (American Institute of Physics Proceeding Series, September 2005, ISBN 0735402671).*

[13] J. Zhang, J.H. Neave, X.B. Li, P.F. Fewster, H.A.W. El Mubarek, P. Ashburn, I.Z. Mitrovic, O.Buiu and S. Hall, "Growth of SiGeC layers by GSMBE and their characterisation by X-Ray techniques"; published in "SiGe: Materials, Processing, and Devices" (Eds: D. Harame, J. Boquet, J. Cressler, D. Houghton, H. Iwai, T.-J. King, G. Masini, J. Murota, H. Rim, and B. Tillack), *Electro-chemical Society, ISBN 1-56677420-9, 2004.*

[14] V. V. N. Obreja, C. Codreanu, K. I. Nuttall, O. Buiu and C. Podaru, "The operation temperature of silicon power thyristors and the blocking leakage current", *2004 IEEE 35th Annual Power Electronics Specialists Conference - PESC 04, 20-25 June 2004, Vol. 4, pp. 3390 – 3393; ISSN: 0275-9306*

[15] V. V. N. Obreja, K. I. Nuttall, O. Buiu, "Electrical characteristics of present-day manufactured power semiconductor pn junctions and the IV characteristic theory", *Proceed. Of 26th Inter-national Semiconductor Conference (CAS 2003), Sept. 28 - Oct. 2, 2003, Sinaia, Romania, vol. 2, pp. 253 – 256 (IEEE Catalog Number 03TH8676, ISBN:0-7803-7821-0)*

[16] G. Craciun, O. Buiu, F. Paszti, C. Cobianu, C.Savaniu, E. Szilagy: "RBS investigations on sol - gel deposited SnO₂ / porous silicon samples", in *Proceed. Of 'the 11th European Conference on Solid State Transducers (EUROSENSORS XI), 485 - 488, Warsaw, Poland, September 21-24, 1997. August 1997 (ISBN 83-908335-0-6).*

[17] O. Buiu, P. Osiceanu, W. Vandervorst, O. Cozar: "Oxygen - ion beam oxidation of silicon - an ESCA study", in "Surface Oxide Films", (J. A. Bardwell, Editor), *PV 96-18, San Antonio, Texas - October 1996, ISBN 1-56677-168-4, ch. 29, no. 18, pp.143-148.*

[18] O. Buiu, I. Pavelescu: "Micro - and nano - technology in Romania", in "Nanotechnology - a dedicated tool for the future" Ed.: Imre Mojzes si Balzs Kovacs, MIL - ORG LTD. And NETI Bu-dapest, pp. 51 - 97, 1997; ISBN 963-8531657.

Journal papers

2016

[1] C. Cobianu, A. Stratulat, B. Serban, M. Brezeanu, O. Buiu, "Sonochemical Synthesis of Metal Oxide Nanocomposites for Gas Sensing", published in Annals of the Academy of Romanian Scientists, Series on Science and Technology of Information, Vol. 9, No. 1, pp. 5-12, 2016

2015

[2] A. Stratulat, B.-C. Serban, A. De Luca, V. Avramescu, C. Cobianu, M. Brezeanu, O. Buiu, L. Diamandescu, M. Feder, S.Z. Ali, F. Udrea, "Low Power Resistive Oxygen Sensor Based on Sonochemical $SrTi_{0.6}Fe_{0.4}O_{2.8}$ (STFO40)", published in Sensors, 15, 17495-17506, 2015, doi:10.3390/s150717495

2014

[3] J.M. Calderon-Moreno, S. Preda, L. Predoana, M. Zaharescu, M. Anastasescu, M. Nicolescu, M. Stoica, H. Stroescu, M. Gartner, O. Buiu, M. Mihaila, B. Serban, "Effect of polyethylene glycol on porous transparent TiO₂ films prepared by sol-gel method", *Ceramics International*, Vol. 40 (1), pp. 2209 – 2220, 2014.

[4] M. Gartner, O. Buiu, V.S. Teodorescu, P. Osiceanu, J.M. Calderon-Moreno, M. Zaharescu, L. Predoana, M. Anastasescu, S. Preda, M. Nicolescu, A. Marin, B. Serban, M. Mihaila, M. Stoica, "Substrate impact on optical and microstructural properties of PEG doped TiO₂ sol-gel films", *Ceramics International*, Volume 40, Issue 8, Part A, September 2014, pp. 11803-11811

[5] B-C Serban, M. Mihaila, V. Avramescu, M. Brezeanu, V. Dumitru, O. Buiu, C.V. Diaconu, C. Cobianu, B Cole, A Cox, T. Marta "New materials and structures for sensors and solar cells", *The Exponent*, Honeywell Technology Journal, Vol.6, Issue No.1, January 2014

2012

[6] T. Uchino, E. Gili, L. Tan, O. Buiu, S. Hall, P. Ashburn, "Improved vertical MOSFET performance using an epitaxial channel and a stacked silicon-insulator structure", *Semicond. Sci. Technol.* 27 (2012) 062002 (4pp) doi:10.1088/0268-1242/27/6/062002

2011

[7] B. Serban, A. K. Sarin Kumar, M. Brezeanu, C. Cobianu, O. Buiu, C. Bostan, N. Varachiu, S. Costea, "CO₂ Sensing Layers for SAW/BAW Devices", *Romanian Journal of Information Science and Technology*, Vol. 14 (3), pp. 222–231, 2011.

[8] V. V. N. Obreja, C. Codreanu, D. Poenar, O. Buiu, "Edge current induced failure of semiconductor PN junction during operation in the breakdown region of electrical characteristic", *Microelectronics Reliability*, Vol. 51 (3), pp. 536-542, 2011.

2009

[9] W. Davey, O. Buiu, M. Werner, I. Z. Mitrovic, S. Hall, P. Chalker, "Estimate of dielectric density using spectroscopic ellipsometry", *Microelectron Eng.* Vol. 86 (7-9), pp. 1905-1907, 2009.

[10] M.M.A. Hakim, L. Tan, O. Buiu, W. Redman-White, S. Hall, P. Ashburn, "Improved sub-threshold slope in short-channel vertical MOSFETs using FILOX oxidation", *Solid-State Elec-tronics*, Volume 53, Issue 7, July 2009, Pages 753-759

[11] Bogdan Serban, A. K. Sarin Kumar, Stefan Costea, Mihai Mihaila, Octavian Buiu, Mihai Brezeanu, Nicolae Varachiu, Cornel Cobianu, "Polymer-Amino Carbon Nanotube Nanocom-posites for Surface Acoustic Wave CO2 Detection", *Romanian Journal of Information Science and Technology*, Vol. 12, Number 3, 2009, pp. 376 – 384.

2008

[12] O. Buiu, W. Davey, Y. Lu, I.Z. Mitrovic, S. Hall, "Ellipsometric analysis of mixed metal oxides thin films", *Thin Solid Films*, Volume 517, Issue 1, 3 November 2008, pp. 453-455

[13] S. Bernardini, M. MacKenzie, O. Buiu, P. Bailey, T.C.Q. Noakes, W.M. Davey, B. Hamilton, S. Hall, "Chemical and optical profiling of ultrathin high-*k* dielectrics on silicon", *Thin Solid Films*, Volume 517, Issue 1, 3 November 2008, pp. 459-461

[14] B. Raeissi, J. Piscator, O. Engström, S. Hall, O. Buiu, M.C. Lemme, H.D.B. Gottlob, P.K. Hurley, K. Cherkaoui, H.J. Osten, "High-*k*-oxide/silicon interfaces characterized by capacitance fre-quency spectroscopy", *Solid-State Electronics*, Volume 52, Issue 9, September 2008, pp. 1274-1279

[15] P. K. Hurley, K. Cherkaoui, E. O'Connor, M. C. Lemme, H. D. B. Gottlob, M. Schmidt, S. Hall, Y.. Lu, O. Buiu, B. Raeissi, J. Piscator, O. Engstrom, S. B. Newcomb, "Interface defects in HfO₂, LaSiO_x, and Gd₂O₃ high – *k* / metal gate structures on silicon", *J. of Electrochem. Soc.* 155(2), pp. G13-G20, 2008.

[16] Lizhe Tan, Octavian Buiu, Stephen Hall, Enrico Gili, Takashi Uchino, Peter Ashburn, "The in-fluence of junction depth on short channel effects in vertical sidewall MOSFETs", *Solid-State Electronics*, Volume 52, Issue 7, July 2008, pp. 1002-1007

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