MAASAI MARA UNIVERSITY

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF MATHEMATICS AND PHYSICAL SCIENCES

LIST OF PUBLICATIONS FOR STAFF TEACHING MASTERS OF SCIENCE IN PHYSICS PROGRAM

Staff	Field of Research	Publication List
Prof Justus Simiyu	Renewable Energy and Material Science	1. **Publications in refereed journals** 1. R. Ndegwa, E Ayieta, J. Simiyu, Odero N. "A Simplified Method for Parameter Determination of a Photovoltaic Module using Manufacturer's data." Africa Journal of Physical Science. **2020**;5:1-9. 2. R. Ndegwa, E. Ayieta, **J. Simiyu,** N. Odero. Simplified Simulation Procedure and Analysis of a Photovoltaic Solar System Using a Single Diode Model, Journal of Power and Energy Engineering, **2020**, 8, 65-93 3. R. Ndegwa, **J. Simiyu,** E. Ayieta, and N. Odero, "A fast and accurate analytical method for parameter determination of a photovoltaic system based on manufacturer's data," Journal of Renewable Energy, vol. 2020, **2020**. 4. Nicholas Musila, Mathew Munji, **Justus Simiyu**, Eric Masika, Raphael Nyenge, Miriam Kineene, Characteristics of TiO_2 Compact Layer prepared for DSSC application, Traektoriâ Nauki = Path of Science. 2018. Vol. 4, No 10 5. Nicholas Musila, Mathew Munji, **Justus Simiyu**, Eric Masika, Raphael Nyenge, Effect of TiO_2 Compact Layer on DSSC Performance, Traektoriâ Nauki = Path of Science. 2018. Vol. 4, No 9 6. Nicholas Musila, Mathew Munji, **Justus Simiyu**, Eric Masika, Raphael Nyenge, Optical Properties and Analysis of OJL Model's Electronic inter-band Transition Parameters of TiO2 Films, Traektoriâ Nauki = Path of Science. 2018. Vol. 4, No 7 7. Justine Sageka, Sebastian Waita, **Justus Simiyu,** Silas Mureramanzi, Bernard Aduda, Structural and Optical Properties of Phosphorous and Antimony doped ZnO thin films Deposited by Spray Pyrolysis: A Comparative Study, IARJSET Volume 4, Issue 11, November 2017, DOI 10.17148/IARJSET.2017.41121 8. Ignatius Nakhoywa Barasa, **Justus Simiyu**, Sebastian Waita, Denis Wekesa, Bernard Aduda. Automobile Battery Monitoring System using Arduino Uno R3 Microcontroller Board, The International Journal Of Science & Technoledge, Vol 5 Issue 6 June, 2017

		9. Henry Barasa Wafula, Robinson Juma Musembi, Albert Owino Juma, Patrick Tonui, **Justus Simiyu**, Thomas Sakwa, Deo Prakash, K.D.Verma. Compositional analysis and optical properties of Co doped TiO_2 thin films fabricated by spray pyrolysis method for dielectric and photocatalytic applications, Optik - International Journal for Light and Electron Optics Volume 128, January 2017, Pages 212-217 10. D. L. Domtau, **J. Simiyu,** E.O. Ayieta, B. Muthoka, L.O. Nyakiti and J.M. Mwabora. Effects of Film Thickness and Electrolyte Concentration on the Photovoltaic Performance of TiO_2 Thin Films. Surface Reviews and Letters, 24, 5(2016) doi: 10.1142/S0218625X17500652. 11. Dinfa Luka Domtau, **Justus Simiyu,** Elijah Omollo Ayieta, Godwin Mwebaze Asiimwe, and Julius Mwakondo Mwabora, "Influence of Pore Size on the Optical and Electrical Properties of Screen Printed TiO_2 Thin Films,"Advances in Materials Science and Engineering, vol. 2016, Article ID 7515802, 7 pages, 2016. doi:10.1155/2016/7515802. 12. D. L. Domtau, **J. Simiyu,** E.O. Ayieta, B. Muthoka, J. M. Mwabora. Optical and Electrical Properties Dependence on Thickness of Screen-Printed TiO_2 Thin Films. Journal of Materials Physics and Chemistry. Vol. 4, No. 1, 2016, pp 1 13. Henry Wafula, Albert Juma, Thomas Sakwa, Robinson Musembi, **Justus Simiyu**, (2016), A Surface photovoltage study of surface defects on Co doped TiO2 thin films fabricated by spray pyrolysis, Coatings, (2016)6 30. 14. Jinbao Zhang, Meysam Pazoki, **Justus Simiyu**, Malin B. Johansson, Ocean Cheung, Leif Häggman, Erik M. J. Johansson, Nick Vlachopoulos, Anders Hagfeldt and Geritt Boschloo The effect of mesoporous TiO2 pore size on the performance of solid-state dye sensitized solar cells based on photoelectrochemically polymerized Poly (3, 4-ethylenedioxythiophene) hole conductor, Electrochimica Acta, 2016, 210, 23-31 15. **Justus Simiyu** , S. Waita, R. Musembi, A. Ogacho, B. Aduda Promotion of PV Uptake and Sector Growth in Kenya through Value Added Training in PV Sizing, Installation and Maintenance Science Direct Energy Procedia 57(2014) 817 – 825 16. Raphael Otakwa, **Justus Simiyu**., Sebastian Waita and Julius Mwabora, (2012), Dark J-V Characterization of a Dye-Sensitized Module. International Journal of Professional Practice (IJPP), 3, (1&2), pp. 165 - 168. 17. Raphael Otakwa, **Justus Simiyu** , Waita and Julius Mwabora, (2012), Application of Dye-Sensitized Solar Cell Technology in the Tropics: Effects of Air Mass on Device Performance. International Journal of Renewable Energy Research (IJRER), 2 (2), pp. 369 - 375. 18. Raphael Otakwa, **Justus Simiyu** , Waita and Julius Mwabora, ((2012), Application of Dye-Sensitized Solar Cell Technology in the Tropics: Effects of Radiation Intensity and Temperature on DSSC Performance, International Journal of Advanced Renewable Energy Research (IJARER), 1, 2 (4), pp. 17 - 25. 19. Jarl Nissfolk, Kristofer Fredin, **Justus Simiyu**, Leif Haeggman, Anders Hagfeldt, Gerrit Boschloo, Interpretation of Small-modulation photocurrent transients in Dye-sensitized Solar Cells- A Film Thickness Study, J. Electroanalytical Chemistry 646 (2010) 91–99

		20. **Justus Simiyu,** Bernard O. Aduda and Julius Mwabora, Conduction Band Edge of (Ti,Sn)O2 Solid Mixtures Tuning for Photoelectrochemical Applications Mater. Res. Soc. Symp. Proc. Vol. 1171 © 2009 Materials Research Society 1171-S05-04. 21. **Justus Simiyu**. Julius Mwabora, Benard Aduda, Sten-Erik. Lindquist, Anders Hagfeldt and Gerrit Boschloo Titania Nanotubes Prepared by Synthesis Method for Dye Sensitized Electrochemical Solar Cells, African Physical Review (2008) 2 Special Issue (Materials): 0083, pg 161 22. **Justus Simiyu** , Julius Mwabora and Benard Aduda, "Anthocyanin Sensitized Nanoporous TiO2 PEC Solar Cells Prepared by Sol Gel Process, Progr. Colloid Polym. Science, 2004 125, 34 – 37. 23. **Justus Simiyu**, Benard Aduda, Julius Mwabora, J.M., "Stability of Anthocyanin Sensitized TiO2 Photoelectrochemical (PEC) Solar Cells" 2002, AJST 6 No 2, 56 – 61 **2. Conference Proceedings** 1. **Justus Simiyu**, Novel Food & Energy Concept towards Electricity Generation & Food Security, Workshop on Solar Energy Materials for Energy Need in Africa, in Honor of the Late Prof. R. Kivaisi & 2nd MSSEESA Conference October 30 — November 4, 2017, Dar es Salaam, Tanzania. 2. Waita, S., **Simiyu, J**., Kiragu, A.N., Imali, V., Aduda, B. A simple low cost solar panel/cell characterization experiment for senior undergraduate Students, ISES Solar World Congress 2015, Conference Proceedings 3. **Simiyu J**., S. Waita, R. Musembi, A. Ogacho, B. Aduda Promotion of PV Uptake and Sector Growth in Kenya through Value Added Training in PV Sizing, Installation and Maintenance, Science Direct Energy Procedia 57(2014) 817 – 825
Dr. Fredrick Otieno	Renewable Energy and Material Science	**Publications in refereed journals** S. Okoth, O. Fredrick, and I. Motochi, "Investigation of wind characteristics and estimation of wind power potential of Narok County using WEIBUlL distribution," Journal of Energy Research and Reviews, vol. 15, no. 2, pp. 35–46, Sep. 2023, doi: 10.9734/jenrr/2023/v15i2305. O. F. Onyango, S. Gaston, E. Kabende, F. Nkunda, and J. H. Ndeda, "Wind power potential in Kigali and western provinces of Rwanda," Asia Pacific Journal of Energy and Environment, vol. 1, no. 3, p. 189, Nov. 2014, doi: 10.15590/apjee/2014/v1i3/54889. A. Belhadj, O. F. Onyango, and N. Rozibaeva, "Boubaker Polynomials Expansion Scheme-Related Heat Transfer Investigation inside Keyhole model," Journal of Thermophysics and Heat Transfer, vol. 23, no. 3, pp. 639–640, Jul. 2009, doi: 10.2514/1.41850. F. O. Otieno, "Analytical method for on-line determination of thermal properties of materials in an absorption calorimeter," 1997. [Online]. Available: http://erepository.uonbi.ac.ke/handle/11295/20242

		F. O. Otieno, B. O. Kola, and F. N. Onyango, “On-line determination of thermophysical properties in an absorption calorimeter,” Measurement Science and Technology, vol. 8, no. 3, pp. 239–244, Mar. 1997, doi: 10.1088/0957-0233/8/3/004. Otieno, Fredrick O. "Analytical method for on-line determination of thermal properties of materials in an absorption calorimeter." PhD diss., 1997 Mwendwa, Geoffrey & Isaac, Motochi & Fredrick, Otieno. (2020). Parametric Study of Matisaa Gray Rock as a Potential Clinker Material. Asian Journal of Advanced Research and Reports. 22-29. 10.9734/ajarr/2020/v14i330334. Alango, T., Fredrick, O. and Motochi, I., 2022. Ceramic Water Filters Impregnated with Silver Nanoparticles for the Removal of Lead and Chromium Ions from Water. Conference Proceedings
Dr. Isaac Motochi	Materials Science and Renewable Energy	**Publications in refereed journals** S. Okoth, F. Otieno, **I. Motochi**, Investigation of Wind Characteristics and Estimation of Wind Power Potential of Narok County Using Weibull Distribution. *J. Energy Res. Rev.*, 15(2) **DOI:** 10.9734/jenrr/2023/v15i2305 T. Alango, F. Otieno, **I. Motochi**, Ceramic Water Filters Impregnated with Silver Nanoparticles for the Removal of Lead and Chromium Ions from Water. *J. Mater. Sci. Res & Rev.*, 10 (3) (2022), 72-82, 2022**.** J.O. Botai, C.M. Botai, K.P. Ncongwane, S. Mpandeli, L. Nhamo, M. Masinde, A.M. Adeola, M.G. Mengistu, H. Tazvinga, M.D. Murambadoro, S. Lottering, **I. Motochi**, P. Hayombe, N.N. Zwane, E.K. Wamiti and T. Mabhaudhi. A Review of the Water–Energy–Food Nexus Research in Africa, Sustainability. 13, (2021) 1762. DOI: 10.3390/su13041762 **I. Motochi**, B.A. Mathe, S.R. Naidoo and E. Aradi, Anomalous behaviour of surface Brillouin scattering in thin strained CVD diamond, *Diam. Relat. Mater*. 109 (2020), 108020. DOI: 10.1016/j.diamond.2020.108020 G. Mwendwa, **I. Motochi**, F. Otieno. Parametric Study of Matisaa Gray Rock as a Potential Clinker Material. *Asian Journal of Advanced Research and Reports*, *14*(3) (2020), 22-29. DOI: 10.9734/ajarr/2020/v14i330334 E. Aradi, S. R. Naidoo, F. Cummings, **I. Motochi**, T. Derry. Cross-sectional Transmission Electron Microscopy studies of Boron Ion Implantation in Hexagonal Boron Nitride, *Diam. Relat. Mater*. 92 (2019), 168-173. DOI: 10.1016/j.diamond.2018.12.020 T. Ichibha, K. Hongo, **I. Motochi**, N.W. Makau, G.O. Amolo, Ryo Maezo, Adhesion of electrodes on diamond (111) surface: A DFT study, *Diam. Relat. Mater*. 81 (2018), 168-175. DOI: 10.1016/j.diamond.2017.12.008 **I. Motochi**, B.A. Mathe, S.R. Naidoo, D. Wamwangi, T.E. Derry, Surface Brillouin scattering observation of higher order resonances in annealed, ion-implanted CVD diamond, *Diam. Relat. Mater*. 76 (2017), 171-176. DOI: 10.1016/j.diamond.2017.04.017 **I. Motochi**, B.A. Mathe, S.R. Naidoo and T. E. Derry, Surface Brillouin scattering in ion-implanted chemical vapour deposited diamond, *Mater. Today*: S3 (2016), S145-S152. DOI: 10.1016/j.matpr.2016.02.025

		I. Motochi, S.R. Naidoo, B.A. Mathe, R. Erasmus, E. Aradi and T.E. Derry, E.J. Olivier, Surface Brillouin scattering on annealed ion-implanted CVD diamond, *Diam. Relat. Mater*. 56 (2015), 6-12. DOI: 10.1016/j.diamond.2015.03.022 E. Aradi, S. R. Naidoo, D. G. Billing, D. Wamwangi, **I. Motochi**, T. E. Derry, Ion beam modification of the structure and properties of hexagonal boron nitride: An infrared and X-ray diffraction study, *Nucl. Instr. and Meth. B*, 331 (2014) 140-143. DOI: 10.1016/j.nimb.2014.01.031 **I. Motochi,** N. W. Makau, G. O. Amolo, B. A. Mathe, S.R. Naidoo, Ab initio structural and electronic study of metals on diamond (111)-(1x1) surface, *Proceedings of SAIP 2011*, pg. 207-213 **I. Motochi,** N. W. Makau, G. O. Amolo, Metal–semiconductor ohmic contacts: An ab initio Density Functional Theory study of the structural and electronic properties of metal–diamond (111)-(1×1) interfaces, *Diam. Relat. Mater*. 23 (2012) 10-17. DOI: 10.1016/j.diamond.2011.12.021
Dr. Duke Oeba	Electronics and Solar Photovoltaics	LIST OF SELECTED PUBLICATIONS 1.Oeba, D. A., & Mosiori, C. O. (2024). Influence of Bulk Defect Density in CIGS on the Efficiency of Copper Indium Gallium Selenide Photocell. European Journal of Applied Physics, 6(6), 1–13. 2.Amondi, M., Ombiro, J., Birech, Z., & Oeba, D. (2024). Predicting Hass Avocado Maturity with NIR Spectroscopy for Non-invasive Dry Matter Estimation in Hass Avocados. Asian Journal of Research and Reviews in Physics, 8(4), 53-65. 3.Oeba, D. A., Bodunrin, J. O., & Moloi, S. J. (2024). Enhancing Radiation-Hardness of Si-based Diodes: An Investigation of Al-Doping Effects in Si Using IV Measurements. Radiation Physics and Chemistry, 111873. 4.Oeba, D.A, Bodunrin, J. O, & Moloi, S. J (2023). The electrical characteristics and conduction mechanisms of Zn doped silicon-based Schottky barrier diode. Heliyon, 9(12), e22793. 5.Bodunrin, J. O., Oeba, D. A., & Moloi, S. J. (2023). Exploring the Impact of Fe-Implantation on the Electrical Characteristics of Al/p-Si Schottky Barrier Diodes. Electronic Materials, 4(2), 95-109. 6.Oeba, D. A., & Mosiori, C. O. (2022). Electrical and Optical Properties of Boron Doped Zinc Oxide Thin-film Deposited by Metal-organic Chemical Vapour Deposition for Photovoltaic Application. Physical Science International Journal, 26(7), 48-55. 7.Soon Min, H., Oeba, D., Makori, E., Munji, M., & Njoroge, W. (2022). Opto-Electrical Properties of Chemical Bath Deposited Cu4SnS4 Thin Films. Int. J. Thin Film Sci. Tec. 11(1), 2. 8.Oeba, D. A., Bodunrin, J. O., & Moloi, S. J. (2021). Electrical properties of 3 MeV proton irradiated silicon Schottky diodes. Physica B: Condensed Matter, 412786. 9.Bodunrin, J. O., Oeba, D. A., & Moloi, S. J. (2021). Current-voltage characteristics of iron- implanted silicon-based Schottky diodes. Materials Science in Semiconductor Processing, 123, 105524. 10.Bodunrin, J. O., Oeba, D. A., & Moloi, S. J. (2021). Current-voltage and capacitance-voltage characteristics of cadmium-doped p-silicon Schottky diodes. Sensors and Actuators A: Physical, 112957. 11.Soonmin, H., Hegde, S. S., Ramesh, K., Dongre, J. K., Khattak, Y. H., Zhang, X. H., ... & Oeba, D. A. (2021). Chalcogenides-based nanomaterials for solar cells and dye-sensitized solar cells. In Chalcogenide-Based Nanomaterials as Photocatalysts (pp. 185-218). Elsevier.

		12.Oeba D. A., & Mosiori, C. O. (2020). Effect of dyes Nanomaterial electrodes for exploration of dye-sensitized solar cells. Int. J. Thin Film Sci. Tec. Vol. 9, No 1, 51-55 13.Oeba D. A. (2019). Optical and electrical properties of CdS: B thin film deposited by chemical bath deposition for photovoltaic application. Int. J. Thin Film Sci. Tec. Vol. 8, No 3, 93 14.Oeba, D. A., Bodunrin, J. O., and Moloi, S. J. (2019). Current-voltage characteristics of aluminum and zinc implanted silicon for radiation detection applications. CEUR Works. Proc. Vol. 2507, Issue 40: 230-235 15.Mosiori, C.O. & Oeba, D.A (2018) Optoelectronic and Structural Effect of Nanoparticles on Cerium Titanium Thick Films. International Educational Applied Research Journal, IEARJ, Vol. 2, Issue 2: 2456-6713 16.Oeba, D. A. (2018). Electrical and optical characterization of Cu4SnS4 and CdS: B thin films for photovoltaic applications. Kenyatta University, Nairobi-Kenya. 17.Mosiori, C. O., & Oeba, D. A. (2017). Studies on Cd1Se0. 6Te0. 4 Thin Films by Spectroscopic and Diffractometer Characterization. Traektoriâ Nauki= Path of Science, 3(9). 18.Makori, N. E., Oeba, D. A., & Mosiori, C. (2017). Relationship between bandgap and particle size of cadmium sulfide quantum dots. Chemistry Research Journal, 2(5), 15-21. 19.Mosiori, C. O., Oeba, D. A., & Shikambe, R. (2017). Determination of Planck's Constant using Light Emitting Diodes. Traektoriâ Nauki= Path of Science, 3(10).
Dr. Kennedy Sirma	Theoretical Physics	Publications in refereed journals 1. Sirma, K. K., Hezekiah, K. C, and Paul, S. "QUASI-PARTICLE ENERGY OF ATOMIC NUCLEI WITH NEUTRON EXCESS (N>Z)". IJRRA 8 (2021), 4, P 17-22. 2. Hezekiah, K. C, Sirma, K. K., Khanna, K. M, and Paul, S. "DESIGNER NUCLEI AND SOME OF THEIR PROPERTIES". IJRRA 8 (2021), 4, P 11-16. 3. Sirma, K. K., MURILA, M., and Khanna, K. M. "NUCLEAR CHARGE RADIUS VARIATION IN THE NUCLEAR SHAPE TRANSITION REGION AROUND N=60-90". IJRAR 7 (2020), 3, P 964-974. 4. Sirma, K. K., and Khanna, K. M. "CALCULATION OF CHARGE RADIUS OF NUCLEI USING THE MODIFIED COULOMB ENERGY FORMULA FOR NUCLEI". IJRRA 7 (2020), 2, P 24-50. 5. Cheruiyot, W.K., Sirma, K. K., and Limo, S.C. "SOLAR CHARACTERISTIC ESTIMATION USING HARGREAVES-SAMAMIS MODEL FOR NANDI COUNTY, KENYA". IJESC 2020 V 7, I 3, P 26500-26504. 6. Cheruiyot, W.K., and Sirma, K. K. "ANALYSIS OF SOLAR ENERGY POTENTIAL IN NANDI COUNTY, KENYA". IJESC 2020 V 10, 5, P 26059-26064. 7. Sirma, K. K., and Khanna, K. M. "INTERACTION BETWEEN NEUTRON-PROTON CORE AND NEUTRON SKIN REGION IN SUPERHEAVY NUCLEI." WSN 144 (2020) 243-265. 8. Sirma, K. K., Chelimo, L. S., and Khanna, K. M. "A MODIFIED NUCLEAR MODEL FOR BINDING ENERGY OF NUCLEI." WSN 143 (2020) 203-223. 9. Masinde, F.W., Tanui, P.K., Khanna, K. M., Tonui, J.K., Murunga G.S.W., Chelimo, L. S., Chelagat, I., Sirma, K. K., and Cheruiyot, W.K. "EFFECT OF MAGNETIC FIELD ON THE PROPERTIES OF HIGH TEMPERATURE SUPERCONDUCTORS." IJSRET, 6(9) pp 916-921 10. Chelagat, I., Tanui, P.K., Khanna, K. M., Tonui, J.K., Murunga G.S.W., Chelimo, L. S., Sirma, K. K., Cheruiyot, W.K., and Masinde, F.W. "INTERACTING BOSE GAS AND QUANTUM DEPLETION." IJSRET, 6(9) pg 922-926.

		11. Masinde, F.W., Tanui, P.K., Khanna, K. M., Tonui, J.K., Murunga G.S.W., Chelimo, L. S., Chelagat, I., Sirma, K. K., and Cheruiyot, W.K. "EFFECTS OF ELECTRIC FIELD ON ENERGY GAP AND TRANSITION TEMPERATURE OF A YBCO SUPERCONDUCTOR." IJLERA, 02(08) pp 57-60. 12. Murunga G.S., Tanui, P.K., Tonui, J.K., Khanna, K. M., Chelimo, L. S., Chelagat, I., Sirma, K. K., and Cheruiyot, W.K. "CRYSTALLIZATION OF NEUTRON MATTER (NEUTRON STARS)." IJLERA, Vol 02(06), pp 110-114 13. Chelagat, I., Tanui, P.K., Sirma, K. K., Murunga G.S.W., Cheruiyot, Khanna, K. M., W.K., Tonui, J.K., and Chelimo, L. S. "PROPERTIES OF A MIXTURE OF BOSONS AND FERMIONS AT VERY LOW TEMPERATURE" IJLERA, Vol 02(04), pp 151-158 14. Tanui, P.K., Khanna, K. M., Tonui, J.K., Murunga G.S., Chelimo, L. S., Chelagat, I., Sirma, K. K., and Cheruiyot, W.K. "Role of LONG-RANGE electron phonon and coulomb interaction in High Tc Cuprate superconductors." IJLERA, Vol 02(04), pp 93-99 15. Sirma K.K., Faith R., and W.K Cheruiyot. "Phase transition in AND " Int. J. Adv. Res 5(1), 2636-2639. 16. Sirma K.K., Faith R., Chelimo L.S., and Khanna K.M. "PHASE TRANSITION IN SUPERCONDUCTORS" Int. J. Adv. Res 4(9), 1952-1955 17. Chelimo L.S., Khanna K.M., Sirma K.K., Tonui J.K., Korir P.K., Kibet J.K., Achieng A.J and Sarai A. "NUCLEON-NUCLEON INTERACTION IN INFINITE NUCLEAR MATTER." International Journal of Physics and mathematical Sciences 2015 vol. 5(1) pp 54-58. ISSN: 2277-2111, http://www.cibtech.org/jpms.htm
Dr. Ing Jared Ombiro Gwaro	Electronics, Lasers and Photonics and Terahertz technology	**Publications in refereed journals** 1. **Jared O Gwaro**, Carsten Brenner, LS Theurer, M Maiwald, Bernd Sumpf, and Martin R Hofmann, Continuous Wave THz System Based on an Electrically Tunable Monolithic Dual Wavelength Y-Branch DBR Diode Laser, Journal of Infrared, Millimeter, and Terahertz Waves, Springer US,1-8,2020. 2. Carsten Brenner, Yinghui Hu, **Jared Ombiro Gwaro**, Nils Surkamp, Benjamin Döpke, Martin R. Hofmann , B. Kani, A. Stöhr, B. Sumpf, A. Klehr, J. Fricke, Near Infrared Diode Laser THz Systems, Adv. Radio Sci., Volume 16, 2018 3. **Jared O. Gwaro,** Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke and Martin R.Hofmann, Compact continuous wave THz source based on monolithic two color laser diode,Proc. SPIE 10684, Nonlinear Optics and its Applications 2018, 106841Y (14 May 2018). 4. **Jared O. Gwaro,** Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke and Martin R.Hofmann, Terahertz frequency generation with monolithically integrated dual wavelength Distributed Bragg Reflector semiconductor laser diode. IET optoelectronics special issue, Volume: 11, Issue: 2, 49 -52, 2017. 5. **Jared O. Gwaro,** Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke and Martin R.Hofmann, Terahertz wave generation from dual wavelength monolithic integrated Distributed Bragg Reflector semiconductor laser diode. ISBN 978-3-9812668-7-0. © IMATech e.V. Ratingen, Germany. GeMiC 2016, March 14–16, 2016, Bochum, Germany

		Conference proceedings: 1. Jared Ombiro Gwaro, Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke, Martin R. Hofmann Continuous wave THz source based on an electrically tunable monolithic two-color semiconductor diode laser, - CLEO/Europe-EQEC 2019, Munich, Germany 23-27 June (2019) 24. Jared Ombiro Gwaro, Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke, Martin R. Hofmann, Compact continuous wave THz source based on monolithic two color laser diode,- SPIE Photonics Europe, Strasbourg, France (2018) 25. Yinghui Hu, Jared Ombiro Gwaro, Nils Surkamp, Benjamin Döpke, Carsten Brenner, B. Khani, A. Stöhr, B. Sumpf, A. Klehr, J. Fri-cke, Mar-tin R. Hofmann , THz sources and systems based on near infrared diode lasers- Kleinheubacher Tagung, Miltenberg, Germany, September 2017 (invited) 26. Jared O. Gwaro, Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke and Martin R.Hofmann- Generation of Terahertz radiation with monolithically integrated dual mode Distributed Bragg Reflector semiconductor diode laser. German Terahertz Conference, Bochum, March 29-31,(2017). 27. Jared O. Gwaro, Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke and Martin R.Hofmann, CW Terahertz generation with dual wavelength monolithic integrated Distributed Bragg Reflector semiconductor laser diode. European Semiconductor Laser workshop, ESLW2016 ,September 23-24, 2016, Darmstadt, Germany. 28. Jared O. Gwaro, Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke and Martin R.Hofmann, Terahertz frequency generation with monolithically integrated dual wavelength Distributed Bragg Reflector semiconductor laser diode. Semiconductor Integrated Optoelectronics (SIOE) conference in Cardiff,UK 5-7th April (2016). 29. Jared O. Gwaro, Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke and Martin R.Hofmann, Terahertz wave generation from dual wavelength monolithic integrated Distributed Bragg Reflector semiconductor laser diode. Germany microwave conference, GeMiC 2016 ,March 14–16, 2016, Bochum, Germany 30. Jared O. Gwaro, Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke and Martin R.Hofmann, Terahertz difference frequency generation by a monolithic integrated dual mode Distributed Bragg Reflector semiconductor diode laser.7th International Workshop on Terahertz Technology and Applications Workshop, Kaiserslautern 15-16th March, (2016).