

CURRICULUM VITAE

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2021- tell now	Vice-Dean for Education and Student Affairs, Faculty of Science, Kafrelsheikh University.
2020- till now	Professor of Material Science & Head of Physics Department, Faculty of Science, Kafrelsheikh University
02/2015 - 07/2018	Associate Prof. at Physics Department, Kafrelsheikh University, Egypt (Oxides semiconductors nanostructures for solar cells and LEDs)
03/2011- 02/2015	Lecturer at physics department, Kafrelsheikh University, Egypt (Oxides semiconductors nanostructures for solar cells and LEDs)
02/2009- 02/2011	University of Bremen, Bremen, Germany Postdoc at the Institue of Solid State Physics Prof. Dr. Jürgen Gutowski.(Nanowire synthesis, nanowire-based LEDs and solar cells)
July 2008	Graduation: Ph.D (Dr. Ing) Technical University Braunschweig, Germany. Topic of thesis: <i>Molecular Beam Epitaxy Growth and Characterization of ZnO-based layers and Heterostructures.</i>
05/2004-01/2009	Researcher in Institute of Semiconductor Technology, Technical University Braunschweig, Germany. Ending with Ph.D (Dr. Ing) on July 10th 2008
04/2003-04/2004	Researcher at the Department of Semiconductor Ulm University, Germany
09/2001– 09/2002	German course; Goethe-institut, Cairo, Egypt; obtained the German languageproficiencycertificate (ZMP)
12/1998- 04/2003	Assistant lecturer at the Department of Physics Faculty of Education, Tanta University, Egypt.
December1998	Obtained Master of Science (M.Sc.) Department of Physics, Tanta University, Egypt.
8/1994 – 12/1998	Demonstrator in Department of Physics Faculty of Education, Tanta University, Egypt
10/1994- 10-1995	Preparatory courses for M.Sc. degree in physics, Department of Physics, Tanta University, Egypt.
May1993	Obtained Bachelor of Science (B.Sc.) Department of Physics, Tanta University, Egypt.

Awarded Fellowships:

- Research fellow from Deutsche Forschungsgemeinschaft (DFG) (2009-2010), Institute of Solid State Physics, University of Bremen, Bremen, Germany
- Post-doctoral award from the (DFG), Institute for Semiconductor Technology Tu Braunschweig, Germany (2007- 2009).
- PhD Award from The Egyptian Ministry of Higher Education long term mission , Institute of Semiconductor Technology Tu Braunschweig, Germany (2004- 2007).
- PhD Award from The Egyptian Ministry of Higher Education long term mission, institute of semiconductor physics, Ulm University, Germany (2003-2004).

Research experiences:

- Operating semiconductor manufacturing machines for thin films and nanostructure growth (Molecular beam epitaxy, Vapour-phase transport growth systems, Electrodeposition, and Wet Chemistry).
- Designing and realizing semiconductor device for microelectronic, optoelectronic and magnetoelectronic applications.
- Semiconductor device processing; field-effect transistors, light-emitting diodes, solar cell, resonant tunneling diodes, waveguides etc.
- Operating and maintenance of CW lasers (He-Cd, Ar⁺, Ti:Al₂O₃, He-Ne, dye lasers), Femtosecond and pico-second lasers (Ti:Al₂O₃).

Semiconductor wafer, epitaxial thin films and nanostructure, device characterization using:

- Reflection High-Energy Electron Diffraction (RHEED)
- X-ray Diffractometry
- Atomic Force Microscopy
- Scanning Electron Microscopy
- Superconducting Quantum Interference Device (SQUID)
- Current-voltage, capacitance-voltage, Hall-effect measurements
- Photoluminescence
- Electroluminescence.
- Good understanding of Transmission Electron Microscopy
- Good command of application programs in Microsoft Office and several others

Teaching Experience

- Internships with teaching at solid state physics department, University of Bremen, Germany (2009/2010)
- Internships with teaching at Institute for Semiconductor Technology, Electrical Engineering, University of Braunschweig, Germany (2005-2008).

Teaching many physics courses at Physics Department, Faculty of science, Kafer Elsheikh university (2008- till now)

Undergraduate student

- Properties of matter.
- Geometrical optics.
- Physical optics.
- Advanced optics
- Laser physics.
- Electromagnetic theory
- Solid state physics.
- Semiconductors
- Introduction to molecular spectroscopy
- Renewable Energy.

Graduate student:

- Nano-materials Technology.
- Application of nanotechnology
- Semiconductor optics.
- Semiconductor technology.
- Solar Energy applications.
- Laser Physics and its Applications.
- Laser spectroscopy.
- Femtosecond spectroscopy.

Participation in international research projects:

1. **Main-investigator** in the project: **Low Cost and Large-Scale Fabrication of Inorganic White Light Emitting Diode Based on Nanostructures Semiconductor Oxides** Project ID: 37212 funded by the Science and Technological Development (STDF), Ministry for Scientific Research, Egypt (September 2021- September 2023).
2. **Consultant in the project** “Efficiency Enhancement of Low Cost Solar Cells based on Earth Abundant Materials” Project ID: 33389 funded by the Science and Technological Development (STDF), Ministry for Scientific Research, Egypt (December 2019-December2021).
3. **Consultant in the project** “Synthesis and characterization of π -conjugated organic and polymeric materials for organic electronics and photovoltaic cell applications” Project ID: 7973 funded by the Science and Technological Development (STDF), Ministry for Scientific Research, Egypt (May 2015 – May 2017).
4. **Main-investigator** in the project: “Synthesis and characterization of

nanomaterials for photovoltaics applications” Research Support Fund Kafrelsheikh University, Egypt (Project ID: KFSU-3-13-03) (Dec. 2013- Dec. 2015).

5. **Main-investigator** in the project: “Low- cost Nano-Wire Solar Cell and White Light Emitting Diode based on Zinc Oxide-Polymer hybrid Nano-structures” (Project ID : 1473) funded by the Science and Technological Development (STDF), Ministry for Scientific Research Egypt (Oct.2010 - Oct.2014)
6. **Main-investigator** in the project: “White-light sources based on ZnO-nanowire/polymer hybrid structures” funded by the German Ministry of Economy and Technology; in cooperation with the Energieforschungszentrum Niedersachsen, Kekule-Institut for Organic Chemistry, University Bonn, and 5 companies. Bremen University, Germany (Feb.2009)
7. **Main-investigator** in the project: *DFG* “p-type doping of ZnO for the production of optoelectronic device in the UV spectral range” TU, Braunschweig, Germany, (Feb. 2006-mid Dec.2008).
8. EU NANDOS “Devices from Oxide Semiconductors” Ulm University & TU Braunschweig, Germany (2003-2008).
9. **Co-investigator** in the project: BMBF, “Oxide semiconductors for spintronics” TU Braunschweig, Germany, (Jan. 2005 –Dec. 2007).

Supervision of award Thesis:

PhD thesis:

1. Laser Luminescence Spectroscopy for Some Novel Materials and its Applications, Ahmad Ghazy, Tanta University, Egypt (award 2020)
2. Fabrication and Characterization of Low cost Solar Cells based on Earth Abundant Materials for Sustainable Photovoltaics : Mahmoud Abd El Fatah, scientific channel with TU Braunschweig, Germany (award 2016)
3. Nanomaterials for Photovoltaic Applications: walid Ismail, Kafrelsheikh University, Egypt (award 2016).
4. Synthesis and Characterization of Nanostructured Oxide Semiconductors for Photovoltaic Applications: Abeer Ramadan Abd ElWahed Nessar, Tanta University, Egypt (award 2015).

MSc thesis:

1. Synthesis and Characterization of some Nanostructured Semiconductor Materials: Sanaa Momay, Kafrelsheikh university, Egypt (award 2020)
2. Synthesis and characterization of nano-metric interfacial layers for solar cell applications, Mohammed Ali Mohsen Kubas Mansoura University, Egypt (award 2019).
3. Synthesis and Characterization of some nanostructured metal oxides for optoelectronic applications, Ali Basuni, Kafrelsheikh University, Egypt (award 2018).
4. A Study for the Physical Properties of some Solar Cells” Mahmoud Abdo Khalifa Mohamed, Mansoura University, Egypt (award 2015).

Supervision of Continuous scientific thesis:

PhD thesis:

1. Synthesis and Characterization of Earth Abundant materials for Photovoltaic Applications: Mahmoud Abdo Khalifa Mohamed, Mansoura University, Egypt.
2. Two-dimensional semiconductors based on group-VA elements: Fabrication, characterization, and nanophotonics application, Osama Hosny Basyouni, Kafrelsheikh university, Egypt
3. Nanostructured Semiconductors for Solar Cell Applications, Hazem Salah, Mansoura University, Egypt.

Continuous MSc thesis

1. Cadmium Oxide Thin Films for Solar Cell Applications: Mohamed Hasanin, Mansoura University, Egypt
2. ZnO based II-VI Semiconductor Nanomaterials for Photovoltaic Applications: Sameh Ezzat, Tanta University, Egypt.
3. Fabrication and Characterization of some nanostructured semiconductors Mabrouk Bakry Kafrelsheikh university, Egypt.

List of Publications:

1. Basyouni, O.H., Abdelfatah, M., El-Khouly, M.E., Mohamed, T., El-Shaer, A., Ismail, W. "Facile and environmentally friendly fabrication of few-layer bismuthene by electrochemical exfoliation method for ultrafast photonic applications" (2021) 882, art. no. 160766.
2. Ismail, W., Bakry, M., Elshobaki, M., El-Shaer, A., Abdelfatah, M. "Impact of precursor concentrations and substrate type on properties of electrodeposited CdO nanorod thin films for optoelectronic applications" (2021) 133, art. no. 105959.
3. Abdelfatah, M., Salah, H.Y., EL-Henawey, M.I., Oraby, A.H., El-Shaer, A., Ismail, W. "Insight into Co concentrations effect on the structural, optical, and photoelectrochemical properties of ZnO rod arrays for optoelectronic applications" (2021) 873, art. no. 159875.
4. El-Shafai, N.M., Abdelfatah, M., El-Mehasseb, I.M., Ramadan, M.S., Ibrahim, M.M., El-Shaer, A., El-Kemary, M.A., Masoud, M.S. "Enhancement of electrochemical properties and photocurrent of copper oxide by heterojunction process as a novel hybrid nanocomposite for photocatalytic anti-fouling and solar cell applications" (2021) 267, art. no. 118631.
5. El-Shafai, N.M., Ji, R., Abdelfatah, M., Hamada, M.A., Kandeal, A.W., El-Mehasseb, I.M., El-Shaer, A., An, M., Ramadan, M.S., Sharshir, S.W., Ismail, W. "Investigation of a novel (GO@CuO-γ-Al₂O₃) hybrid nanocomposite for solar energy applications" (2021) 856, art. no. 157463.
6. El-Henawey, M.I., Kubas, M., El-Shaer, A., Salim, E. "The effect of post-annealing treatment on the structural and optoelectronic properties of solution-processed TiO₂ thin films" (2021) .

7. Liang, D., Dong, C., Cai, L., Su, Z., Zang, J., Wang, C., Wang, X., Zou, Y., Li, Y., Chen, L., Zhang, L., Hong, Z., [El-Shaer, A.](#), Wang, Z.-K., Gao, X., Sun, B. "Unveiling Crystal Orientation in Quasi-2D Perovskite Films by In Situ GIWAXS for High-Performance Photovoltaics"(2021).
8. Li, Y., Chen, Z., Liang, D., Zang, J., Song, Z., Cai, L., Zou, Y., Wang, X., Wang, Y., Li, P., Gao, X., Ma, Z., Mu, X., [El-Shaer, A.](#), Xie, L., Su, W., Song, T., Sun, B."Coffee-Stain-Free Perovskite Film for Efficient Printed Light-Emitting Diode"(2021).
9. Ismail, W., El-Shafai, N.M., El-Shaer, A., Abdelfatah, M. "Impact of substrate type on the surface and properties of electrodeposited Cu₂O nanostructure films as an absorber layer for solar cell applications" (2020) 120, art. no. 105335, .
10. Ismail, W., [El-Shaer, A.](#), Abdelfatah, M. "Phase transition of Cd(OH)₂ and physical properties of CdO microstructures prepared by precipitation method for optoelectronic applications"(2020) 956 (1), art. no. 012006, .
11. Abdelfatah, M., El-Shafai, N.M., Ismail, W., El-Mehasseb, I.M., [El-Shaer, A.](#) "Simulation of CuO/ZnO heterojunction for photovoltaic applications" (2020) 956 (1), art. no. 012005, .
12. El-Shafai, N.M., Shukry, M., El-Mehasseb, I.M., Abdelfatah, M., Ramadan, M.S., [El-Shaer, A.](#), El-Kemary, M." Electrochemical property, antioxidant activities, water treatment and solar cell applications of titanium dioxide – zinc oxide hybrid nanocomposite based on graphene oxide nanosheet" (2020) 259, art. no. 114596, .
13. Elsharkawy, M., Derbalah, A., Hamza, A., [El-Shaer, A.](#) "Zinc oxide nanostructures as a control strategy of bacterial speck of tomato caused by *Pseudomonas syringae* in Egypt"(2020) 27 (16), pp. 19049-19057.
14. El-Shafai, N.M., Abdelfatah, M.M., El-Khouly, M.E., El-Mehasseb, I.M., [El-Shaer, A.](#), Ramadan, M.S., Masoud, M.S., El-Kemary, M.A."Magnetite nano-spherical quantum dots decorated graphene oxide nano sheet (GO@Fe₃O₄): Electrochemical properties and applications for removal heavy metals, pesticide and solar cell" (2020) 506, art. no. 144896, .
15. [El-Shaer, A.](#), Abdelfatah, M., Mahmoud, K.R., Momay, S., Eraky, M.R. "Correlation between photoluminescence and positron annihilation lifetime spectroscopy to characterize defects in calcined MgO nanoparticles as a first step to explain antibacterial activity" (2020) 817, art. no. 152799, .
16. Gaafar, R.M., Diab, R.H., Halawa, M.L., El-Shanshory, A.R., [El-Shaer, A.](#), Hamouda, M.M. "Role of zinc oxide nanoparticles in ameliorating salt tolerance in soybean" (2020) 60 (3), pp. 733-747.
17. Abdelfatah, M., Ismail, W., El-Shafai, N.M., [El-Shaer, A.](#) "Effect of thickness, bandgap, and carrier concentration on the basic parameters of Cu₂O nanostructures photovoltaics: numerical simulation study" (2020) pp. 1-9.
18. Mahdy M. Elmahdy, and [Abdelhamid El-Shaer](#) "Structural, optical and dielectric investigations of electrodeposited p-type Cu₂O" Journal of Materials Science: Materials in Electronics, published online:22 October (2019).
19. Aly Derbalah, Mohsen Mohamed Elsharkawy, Amany Hamza, and [Abdelhamed El-Shaer](#) "Resistance induction in cucumber and direct antifungal activity of zirconium oxide nanoparticles against *Rhizoctonia solani*" Pesticide Biochemistry and Physiology 157 230–236 (2019)
20. [Abdelhamid El-Shaer](#), Walid Ismail, and Mahmoud Abdelfatah "Towards low cost

fabrication of inorganic white light emitting diode based on electrodeposited Cu₂O thin film/TiO₂ nanorods heterojunction” *Materials Research Bulletin* 116 111–116 (2019).

21. **Abdelhamid El-Shaer**, Mahmoud Abdelfatah, Ali Basuni, and Mohsen Mosaad “Effect of KOH molarity and annealing temperature on ZnO nanostructure properties” *Chinese Journal of Physics* 56 1001–1009 (2018).
22. Mahmoud Abdelfatah, Walid Ismail, and **Abdelhamid El-Shaer** “Low cost inorganic white light emitting diode based on submicron ZnO rod arrays and electrodeposited Cu₂O thin film” *Materials Science in Semiconductor Processing* 81, 44–47 (2018)
23. Marwa Nabila, Kamal R. Mahmoudb, **Abdelhamid El-Shaer**, and Huda A. Nayberb “Preparation of crystalline silica (quartz, cristobalite, and tridymite) and amorphous silica powder (one step)” *Journal of Physics and Chemistry of Solids* 121, 22–26 (2018).
24. Mahmoud Abdelfatah, and **Abdelhamid El-Shaer** “One step to fabricate vertical submicron ZnO rod arrays by hydrothermal method without seed layer for optoelectronic devices” *Materials Letters* 210, 366–369 (2018)
25. M. Abdelfatah, J. Ledig, **A. El-Shaer**, A. Sharafiev, P. Lemmens, M. M. Mosaad, A. Waag, and A. Bakin. ‘Effect of Potentiostatic and Galvanostatic electrodeposition modes on the basic parameters of solar cells based on Cu₂O thin films’ *Electrochemical Society Journal of Solid State Science and Technology*, V5, iss.6,183-187, (2017).
26. M. Abdelfatah, J. Ledig, **A. El-Shaer**, A. Wagner, V. Marin-Borras, A. Sharafiev, P. Lemmens, M. M. Mosaad, A. Waag, A. Bakin “Fabrication and characterization of low cost Cu₂O/ZnO:Al solar cells for sustainable photovoltaics with earth abundant materials” *Solar Energy Materials & Solar Cells* 145, 454–461 (2016).
27. M. Abdelfatah, J. Ledig, **A. El-Shaer**, A. Wagner, V. Marin-Borras, A. Sharafiev, P. Lemmens, M. M. Mosaad, A. Waag, A. Bakin “Fabrication and characterization of flexible solar cell from electrodeposited Cu₂O thin film on plastic substrate” *Solar Energy* 122, 1193–1198 (2015)
28. **A. El-Shaer**, M.T.Y. Tadros, M.A. Khalifa, “Fabrication of Homo Junction Cuprous Oxide Solar Cell by Electrodeposition Method” *Nature and Science* 13 (5), 14-22 (2015).
29. **A. El-Shaer**, AR Abdelwahed, MM Mosaad “Potentiostatic Deposition of ZnO Nanowires: Effect of Applied Potential and ZnCl₂ Concentration” *International Journal of Research in Engineering and Science* 3 (12), 28-36 (2015).
30. **A. El-Shaer**, AR Abdelwahed, MM Mosaad “Effect of Deposition Parameters on Electrodeposited Cuprous Oxide Thin Films” *International Journal of Emerging Technology and Advanced Engineering* 4 (12), 595-602 (2014).
31. **A. El-Shaer**, MTY Tadros, MA Khalifa “Ambient Effect on Crystalline Silicon Solar Cells Parameters” *International Journal of Renewable Energy Research* 2 (8), 213-220 (2014).
32. **A. El-Shaer** and A. R. Abdelwahed, Potentiostatic Deposition and Characterization of Cuprous Oxide Thin Films; *ISRN Nanotechnology* Article ID 271545, 1-4)2013).
33. Apurba Dev, **Abdelhamid El-Shaer** and Tobias Voss. Optical applications of ZnO nanowires, *urnal of Selected Topics in Quantum Electronics*, In press (2010)
34. **Abdelhamid El-Shaer**, Apurba Dev, Jan-Peter Richters, Siegfried R. Waldvogel, Julia

- Waltermann, Wolfgang Schade, and Tobias Voss. Hybrid LEDs based on ZnO-Nanowire Arrays. *physica status solidi (b)* 247, 1564(2010).
35. M. Willander, O. Nur, Q. X. Zhao, L. L. Yang, M. Lorenz, B. Q. Cao, J. Zúñiga Pérez, C. Czekalla, G. Zimmermann, M. Grundmann, A. Bakin, A. Behrends, M. Al-Suleiman, [A. El-Shaer](#), A. Che Mofor, B. Postels, A. Waag, N. Boukos, A. Travlos, H. S. Kwack, J. Guinard and D. Le Si Dang. Zinc oxide nanorod based photonic devices: recent progress in growth, light emitting diodes and lasers. *Nanotechnology* 20 332001 (2009).
 36. Robin, I.C., Marotel, P., [El-Shaer, A.](#), Petukhov, V., Bakin, A., Waag, A., Lafossas, M., Garcia, J., Rosina, M., Ribeaud, A., Brochen, S., Ferret, P., Feuillet, G. Compared optical properties of ZnO heteroepitaxial, homoepitaxial 2D layers and nanowires. *Journal of Crystal Growth* 311, 2172–2175 (2009).
 37. Daniel Hofstetter, Ricardo Théron, [Abdel-Hamid El-Shaer](#), Andrey Bakin, and Andreas Waag; Demonstration of a ZnO/MgZnO-based one-dimensional photonic crystal multiquantum well laser. *Appl. Phys. Lett.* 93, 101109 (2008).
 38. Hofstetter, D., Thron, R., [El-Shaer, A.](#), Bakin, A., Waag, A. Gallium nitride heterostructures on 3D structured silicon. *Nanotechnology*, 19 (40) (2008) 405301
 39. Daniel Hofstetter, Yargo Bonetti, Esther Baumann, Fabrizio R. Giorgetta, [Abdel-Hamid El-Shaer](#), Andrey Bakin, Andreas Waag, Rüdiger Schmidt-Grund and Marius Grundmann; Characterization of an optically pumped ZnO-based 3rd order distributed feedback laser. *Proc. SPIE*, Vol. 6895, 68950J (2008).
 40. Robin, I.C., Tavares, C., Rothman, J., Feuillet, G., [El-Shaer, A.H.](#), Bakin, A., Waag, A., Dang, L.S. Structural and spectroscopic properties of a 2 inch ZnO-on-sapphire epiwafer grown by using molecular beam epitaxy. *Journal of the Korean Physical Society*, 53 (5 PART 2) (2008), pp. 2877-2879
 41. Ivanov, S.V., [El-Shaer, A.](#), Al-Suleiman, M., Bakin, A., Waag, A., Lyublinskaya, O.G., Shmidt, N.M., Listoshin, S.B., Kyutt, R.N., Ratnikov, V.V., Terentyev, A.Ya., Ber, B.Ya., Komissarova, T.A., Ryabova, L.I., Khokhlov, D.R. Studies of N-doped p-ZnO layers grown on c-sapphire by radical source molecular beam epitaxy. *Journal of the Korean Physical Society*, 53 (5 PART 2), (2008) 3016-3020.
 42. [A. El-Shaer](#), A. Bakin, M. Al-Suleiman, S. Ivanov, A. Che Mofor and A. Waag: Growth of wide band gap wurtzite ZnMgO epilayers on (0001) Al₂O₃ by radical-source molecular beam epitaxy, *Superlattices and Microstructures*, Elsevier Volume 42, Issues 1-6, Pages 129-133 (2007).
 43. [A. El-Shaer](#), A. Bakin, M. Al-Suleiman, S. Ivanov, A. Che Mofor and A. Waag: Improvement of radical-source molecular beam epitaxial growth of ZnO on (0001) sapphire employing RHEED intensity oscillations, *Superlattices and Microstructures*, Elsevier Volume 42, Issues 1-6, Pages 158-164 (2007).
 44. [A. El-Shaer](#), A. Bakin, E. Schlenker, A. C. Mofor, G. Wagner, S. Reshanov and A. Waag Fabrication and characterization of n-ZnO on p-SiC heterojunction diodes on 4H-SiC substrates, *Superlattices and Microstructures*, Elsevier Volume 42, Issues 1-6, Pages 387-391 (2007).
 45. [A. El-Shaer](#), A. Bakin, A. Che Mofor, M. Kreye, A. Waag, M. Heuken, J. Bläsing, A. Krost, J. Stoimenos H₂O₂-Molecular Beam Epitaxy of high quality ZnO , *Applied Physics A: Materials Science & Processing* 88, 57(2007).
 46. T. V. Shubina, A. A. Toropov, O. G. Lublinskaya, P. S. Kop'ev, and S. V. Ivanov, [A. El-Shaer](#), M. Al-Suleiman, A. Bakin, and A. Waag, A. Voinilovich, E. V. Lutsenko, and

- G. P. Yablonskii, J. P. Bergman, G. Pozina, and B. Monemar. Recombination dynamics and lasing in ZnO/ZnMgO single quantum well structures. *Appl. Phys. Lett.* 91, 201104 (2007).
47. A. Bakin, J. Kioseoglou. Pecz, [A. El-Shaer](#), A.-C. Mofor, J. Stoemenos and A. Waag. Misfit reduction by a spinel layer formed during the epitaxial growth of ZnO on sapphire using a MgO buffer layer , *J. Crystal Growth*, 308 , 314 (2007)
 48. Daniel Hofstetter, Yargo Bonetti, Fabrizio R. Giorgetta, [Abdel-Hamid El-Shaer](#), Andrey Bakin, Andreas Waag, Rüdiger Schmidt-Grund, Mathias Schubert, and Marius Grundmann: Demonstration of an ultraviolet ZnO-based optically pumped 3rd order distributed feedback laser, *Appl. Phys. Lett.* 91, 111108 (2007).
 49. M. Al-Suleiman, [A. El-Shaer](#), A. Bakin, H.-H.Weermann and A.Waag ; Optical investigations and exciton localization in high quality Zn_{1-x}Mg_xO–ZnO single quantum wells, *Appl. Phys. Lett.* 91, 081911 (2007).
 50. A.Bakin, A. El-Shaer, A.C.Mofor, M. Al-Suleiman, E. Schlenker, B. Postels, M. Kreye, A.Waag: ZnMgO-ZnO Quantum Wells embedded into ZnO Nanopillars: towards realisation of Nano-LEDs, *phys. stat. sol. (c)* 4, No. 1, 158–161 (2007).
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 52. S.V. Ivanov, A. El-Shaer, T.V. Shubina, S.B. Listoshin, A. Bakin, and A. Waag Growth kinetics and properties of ZnO/ZnMgO heterostructures grown by radical-source molecular beam epitaxy, *phys. stat. sol.(c)* 4, No.1,154–157 (2007).
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 54. A.C. Mofor, F. Reuß, A. El-Shaer, A. Bakin, H. Ahlers, U. Siegner, S. Sievers, M. Albrecht, W. Schoch, N. Izyumskaya, V. Avrutin, J. Stoimenos., and A. Waag: Magnetism in Mn-/V-doped ZnO layers; *Appl. Phys. A* 88 161-166 (2007).
 55. B. Piechal, J. Yoo, A-H. Elshaer, A-C. Mofor, G-C. Yi, A. Bakin, A. Waag, F. Donatini, Le Si Dang Optical investigations and exciton localization in high quality Zn_{1-x}Mg_xO– ZnO single quantum wells, *Phys. Stat. sol. (b)*, 1-4 (2007).
 56. A. C. Mofor, A. Bakin, U. Chejarla, E. Schlenker, A. El-Shaer, G. Wagner, N. Boukos, A.Travlos, and A. Waag: Fabrication of ZnO Nanorod-based p-n Heterojunction on SiC Substrate, *Superlattices and Microstructures*, Elsevier Volume 42, Issues 1-6, Pages 415-420 (2007).
 57. A. Bakin, A. Che Mofor, A. El-Shaer, and A. Waag: Vapour Phase Transport Growth of ZnO Layers and Nanostructures, *Superlattices and Microstructures*, Elsevier Volume 42, Issues 1-6, Pages 33-39 (2007).
 58. A. El-Shaer, A. Bakin, A. Che Mofor, J. Bläsing, A. Krost, J. Stoimenos, B. Pécz, M. Kreye, M. Heuken, and A. Waag CBE Growth of High-Quality ZnO Epitaxial Layers, *phys. stat. sol. (b)* 243, No. 4, 768–772 (2006).
 59. A. Bakin, A. El-Shaer, A. Che Mofor, M. Kreye, A. Waag, F. Bertram, J. Christen, J. Stoimenos. MBE growth of ZnO layers on sapphire employing hydrogen peroxide as an oxidant, *J. Crystal Growth* 287, n. 1, 2006, pp. 7-11.(2006)
 60. B. Pécz, A. El-Shaer, A. Bakin, A. C. Mofor, A. Waag, J. Stoemenos: characterization of ZnO films grown by molecular beam epitaxy on sapphire with MgO buffer, *J. Appl. Phys.* 100, 103506 (2006).

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