

Publication List

Gülnur Aygün

October 2017

1. "Investigation of Electron Beam Lithography on Metal-Insulator Transition Behavior of Vanadium Dioxide" H. Yuce, H. Alaboz, Y. Demirhan, M. Ozdemir, L. Ozyuzer, **G. Aygun**, submitted to Journal of Electronic Materials, JEMS-D-16-00808.
2. "Comparison of Photocatalytic Properties of TiO₂ Thin Films and Fibers" M. Ozdemir, M. Kurt, L. Ozyuzer, **G. Aygun**, European Physical Journal Applied Physics (EPJ AP), in press, doi: 10.1051/epcap/2016160247.
3. "Influence of copper composition and reaction temperature on the properties of CZTSe thin films" M Ali Olgar, Y. Atasoy, M. Tomakin, **G.Aygun**, L. Ozyuzer, E. Bacaksiz, Journal of Alloys and Compounds **682**, 610-617 (2016).
4. "Improvement of optical and electrical properties of ITO thin films by electro-annealing" Hasan Koseoglu, Fulya Turkoglu, Metin Kurt, Mutlu D. Yaman, Fatime G. Akca, **Gulnur Aygun**, Lutfi Ozyuzer, Vacuum **120**, 8-13 (2015).
5. "Growth of Cu₂ZnSnS₄ absorber layer on flexible metallic substrates for thin film solar cell applications" S. Yazici, M.A. Olgar, F.G. Akca, A. Cantas, M. Kurt, **G. Aygun**, E. Tarhan, E. Yanmaz, L. Ozyuzer, Thin Solid Films **589**, 563-573 (2015).
6. "In-situ Spectroscopic Ellipsometry and Structural Study of HfO₂ Thin Films Deposited by RF Magnetron Sputtering" Ayten Cantas, **Gulnur Aygun**, Deepak Kumar Basa, Journal of Applied Physics **116**, 083517 (2014).
7. "Impact of incorporated Oxygen quantity on Optical, Structural and Dielectric Properties of reactive magnetron sputter grown HfO₂/Hf/Si high-k thin film" by A. Cantas, **G. Aygun**, and R. Turan, Applied Surface Science **318**, 199-205 (2014).
8. "Simulation of 3D inclined/rotated UV lithography and its application to microneedles" Shijie Liu, Georg Roeder, **Gulnur Aygun**, Kristian Motzek, Peter Evanschitzky, Andreas Erdmann, Optik **123**, 928-931 (2012).
9. "Effects of physical growth conditions on the structural and optical properties of sputtered grown thin HfO₂ films" **Gulnur AYGUN**, Ayten CANTAS, Yilmaz SIMSEK, Rasit TURAN, Thin Solid Films **519**, 5820-5825 (2011).
10. "Determination of the Dill parameters of thick positive resist for use in modeling applications" G. Roeder, S. Liu, **G. Aygun**, P. Evanschitzky, A. Erdmann, M. Schellenberger, L. Pfitzner, Thin Solid Films **519**, 2978-2984 (2011).

11. "Ge nanocrystals embedded in SiO₂ in MOS based radiation sensors", Aliakber Aktag, Ercan Yilmaz, Nader A.P. Mogaddam, **Gulnur Aygun**, Ayten Cantas, Rasit Turan, Nuclear Instruments and Methods in Physics Research B **268**, 3417-3420 (2010).
12. "Impact of Temperature Increments on Tunneling Barrier Height and Effective Electron Mass for plasma nitrided thin SiO₂ layer on a large wafer area", **G. Aygun**, T. Erlbacher, G. Roeder, M. Wolf, M. Schellenberger, L. Pfitzner, Journal of Applied Physics **108**, 073304 (2010).
13. "High quality ITO thin films grown by DC and RF sputtering without oxygen" O. Tuna, Y. Selamet, **G. Aygun**, L. Ozyuzer, Journal of Physics D: Applied Physics **43**, 055402 (2010).
14. "Evolution of SiO₂/Ge/HfO₂(Ge) Multilayer Structure During High Temperature Annealing" D. Sahin, I. Yildiz, A. I. Gencer, **G. Aygun**, R. Turan, Thin Solid Films **518**, 2365–2369 (2010).
15. "Interfacial and Structural Properties of sputtered HfO₂ layers", **G. Aygun**, I. Yildiz, Journal of Applied Physics **106**, 014312 (2009).
16. "Local oxidation nanolithography on Hf thin films using atomic force microscopy (AFM)", S. Buyukkose, S. Okur, **G. Aygun**, Journal of Physics D: Applied Physics **42**, 105302 (2009).
17. "Effect of substrate temperature on structural, electrical and optical properties of indium tin oxide grown by dc magnetron sputtering" O. Tuna, Y. Selamet, **G. Aygun**, F. Turkoglu, L. Ozyuzer, Journal of Optoelectronics and Advanced Materials-Symposia **1**, 404 (2009).
18. "Electrical and dielectrical properties of tantalum oxide films grown by Nd:YAG laser assisted oxidation", **G. Aygun**, R. Turan, Thin Solid Films **517**, 994 (2008).
19. "XPS study of pulsed Nd:YAG laser oxidized Si" **G. Aygun**, E. Atanassova, K. Kostov, R. Turan, Journal of Non-Crystalline Solids **352**, 3134 (2006).
20. "Structural and optical characteristics of tantalum oxide grown by pulsed Nd:YAG laser oxidation" E. Atanassova, **G. Aygun**, R. Turan, Tz. Babeva, Journal of Vacuum Science and Technology A **24** (2), 206 (2006).
21. "Spatial distribution of light – emitting centers in Si – implanted SiO₂" U. Serincan, **G. Aygun**, R. Turan, Journal of Luminescence **113**, 229 (2005).
22. "Properties of reactive O₂ ion beam sputtered TiO₂ on Si wafers" S. Ulucan, **G. Aygun**, L. Ozyuzer, M. Egilmez, R. Turan, Journal of Optoelectronics and Advanced Materials **7**, 297 (2005).
23. "Reflectance spectra and refractive index of Nd:YAG laser oxidized Si surface" **G. Aygun**, E. Atanassova, R. Turan, Tz. Babeva, Materials Chemistry and Physics **89**, 316 (2005).
24. "Oxidation of Si Surface by a Pulsed Nd-YAG Laser" **G. Aygun**, E. Atanassova, A. Alacakir, L. Ozyuzer, R. Turan, Journal of Physics D: Applied Physics **37**, 1569 (2004).

Other Manuscripts:

1. "The Structure and Properties of Liquid Metals from Molecular Dynamics", G. Dereli, **G. Aygün Özyüzer** and Tahir Çağın, preprint (2000).

International conferences / meetings attended:

1. "The Structure and The Properties of Liquid Metals from Molecular Dynamics", **G. Aygün Özyüzer**, G. Dereli, and Tahir Çağın, has been presented at the 2000 March Meeting of the American Physical Society (March 20-26, 2000) in Minneapolis, MN, USA, (Oral presentation).
2. "Properties of reactive O₂ ion beam sputtered TiO₂ on Si wafers" S. Ulucan, **G. Aygun**, L. Ozyuzer, M. Egilmez, R. Turan, 13th International School on Condensed Matter Physics: Varna, Bulgaria August 29-September 4, 2004.
3. "Structural, optical and electrical characteristics of tantalum oxide grown by pulsed Nd:YAG laser oxidation" **G. Aygun**, R. Turan, E. Atanassova, Tz. Babeva, NATO ASIs on Photon-based Nano-Science and Technology: from Atomic Level Manipulation to Materials Synthesis and Nano-Biodevice Manufacturing (Photon-NST'2005), Quebec, Canada, 19 Sep 2005 – 29 Sep 2005 (Oral presentation).
4. "Structural, optical and electrical characteristics of tantalum oxide grown by pulsed Nd:YAG laser oxidation" **G. Aygun**, R. Turan, E. Atanassova, Tz. Babeva, NATO ASIs on Photon-based Nano-Science and Technology: from Atomic Level Manipulation to Materials Synthesis and Nano-Biodevice Manufacturing (Photon-NST'2005), Quebec, Canada 19 Sep 2005 - 29 Sep 2005 (Poster presentation).
5. "Effects of physical growth conditions on the structural properties of sputtered grown thin HfO₂ films" **G. Aygun** and A. Cantas, E-MRS 2010 Spring Meeting, Symposium E: Frontiers of multifunctional oxides, Congress Center in Strasbourg (France), June 7-11, 2010.
6. "Depth profile of thin HfO₂ layers with an in-situ Spectroscopic Ellipsometer" A. Cantas and **G. Aygun**, E-MRS 2010 Spring Meeting, Symposium E: Frontiers of multifunctional oxides, Congress Center in Strasbourg (France), June 7-11, 2010.

7. "Interface Analysis of HfO₂ films on Si X-Ray Photoelectron Spectroscopy" A. Cantas and **G. Aygun**, TUCr 2012, Dokuz Eylül Üniversitesi, Tınaztepe Yerleşkesi, İzmir, 7-9 Haziran 2012.
8. "XRD and XPS Studies of Large Area Grown ITO" Sebnem Yazici, Ayten Cantas, Mutlu D. Yaman, Hasan Koseoglu, Hilal Saglam, **Gulnur Aygun**, Lutfi Ozyuzer, TUCr 2012, Dokuz Eylül Üniversitesi, Tınaztepe Yerleşkesi, İzmir, 7-9 Haziran 2012.
9. "Electrical and Optical Properties of Large Area Grown ITO" Sebnem Yazici, Ayten Cantas, Mutlu D. Yaman, Hasan Koseoglu, Hilal Saglam, **Gulnur Aygun**, Lutfi Ozyuzer, PLASMA 2012, Radisson Blue Hotel Çeşme, İzmir, 10-13 Haziran 2012.
10. "Fabrication and Characterization of CZTS Absorber Layer on Titanium Coated Ceramic for Solar Cells" M.A. Olgar, H. Saglam, S. Yazici, A. Cantas, **G. Aygun**, E. Yanmaz, L. Ozyuzer, PLASMA 2012, Radisson Blue Hotel Çeşme, İzmir, 10-13 Haziran 2012.
11. "X-Ray Photoelectron Spectroscopic Analysis of HfO₂/Hf/Si Multilayer Structure Prepared by Radio Frequency Magnetron Sputtering" Ayten Cantas, **Gulnur Aygun**, PLASMA 2012, Radisson Blue Hotel Çeşme, İzmir, 10-13 Haziran 2012.
12. "Temperature Dependence of Ionic Conductivity in PVB/LiClO₄" Halil Arslan, H. Saglam, M.D. Yaman, H. Koseoglu, H. Alaboz, **G. Aygun**, L. Ozyuzer, PLASMA 2012, Radisson Blue Hotel Çeşme, İzmir, 10-13 Haziran 2012.
13. "Depth Profile Analysis of HfO₂/Hf/Si Multilayer Structure Using X-Ray Photoelectron Spectroscopy" Ayten Cantas, **Gulnur Aygun**, NanoTR8, Hacettepe Üniversitesi, Sıhhiye Kampüsü, Ankara, 25-29 Haziran 2012.
14. "XRD and XPS Studies of Large Area Grown ITO for Solar Cells" Sebnem Yazici, Ayten Cantas, Mutlu Devran Yaman, Hasan Koseoglu, Hilal Saglam, **Gulnur Aygun**, Lutfi Ozyuzer, NanoTR8, Hacettepe Üniversitesi, Sıhhiye Kampüsü, Ankara, 25-29 Haziran 2012.
15. "In-situ Spectroscopic Ellipsometry and Structural Study of HfO₂ Thin Films Deposited by RF Magnetron Sputtering" **Gulnur Aygun**, Ayten Cantas, Deepak Kumar Basa, SATF2014, Cesme, Izmir, Turkey, 15-19 Sept 2014.
16. "Photocatalytic properties of TiO₂ Thin Films and Fibers" Mehtap Ozdemir Koklu, Metin Kurt, Gulnur Aygun, Lutfi Ozyuzer, SATF2014, Cesme, Izmir, Turkey, 15-19 Sept 2014.
17. "Preperation and Characterization of Cu₂ZnSnS₄ Absorber Layer on Metallic Flexible Substrates" Sebnem Yazici, M. Ali Olgar, F. Gulsah Akca, Metin Kurt, **Gulnur Aygun**, Ekrem Yanmaz and Lutfi Ozyuzer, SATF2014, Cesme, Izmir, Turkey, 15-19 Sept 2014.
18. "New transfer method of exfoliated thin Bi₂Sr₂CaCu₂O_{8+x} single crystals on sapphire for hot electron bolometer" Hakan Alaboz, Yasemin Demirhan, Tugce Semerci, Metin Kurt, **Gulnur Aygun**, Devrim Pesen, Nobuaki Miyakawa, Lutfi Ozyuzer, SATF2014, Cesme, Izmir, Turkey, 15-19 Sept 2014.

19. "Structural and Electrical Characterizations of p-type $\text{Cu}_2\text{ZnSnS}_4$ Absorber Layer Material for Solar Cells" Fatime Gulsah Akca, Sebnem Yazici, Mehmet Ali Olgar, Fulya Turkoglu, **Gulnur Aygun**, Ekrem Yanmaz, Lutfi Ozyuzer, SolarTR-3, METU, Ankara, Turkey, 27-29 Nisan 2015.
20. "Characterization of VO_2 Films Grown by Magnetron Sputtering for Thermochromic Applications" Hurriyet Yuce, Hakan Alaboz, Mehtap Koklu, **Gulnur Aygun**, Lutfi Ozyuzer, SolarTR-3, METU, Ankara, Turkey, 27-29 Nisan 2015.
21. "VO₂ films grown by magnetron sputtering" **Gulnur Aygun**, Hurriyet Yuce, Lutfi Ozyuzer, Mehtap Ozdemir, E-MRS 2015 Fall Meeting, Central Campus of Warsaw University of Technology, Poland, September 14 – 18, 2015.
22. "Dependence of Ionic Conductivity of $\text{Li}_{0.5-x}\text{La}_{0.5}\text{Ti}_{1-x}\text{O}_3$ Electrolyte on Ion Substitution" Mehtap Koklu Ozdemir, Sena Gulen, Seda Ulusoy, **Gulnur Aygun**, Lutfi Ozyuzer, E-MRS 2015 Fall Meeting, Central Campus of Warsaw University of Technology, Poland, September 14 – 18, 2015.
23. "Magnetron Sputtered VO_2 films for Field Effect Transistors via Metal Insulator Transition" **Gulnur Aygun**, Hurriyet Yuce, Yasemin Demirhan, Hakan Alaboz, POLAND QM 2016 Mehtap Ozdemir, Lutfi Ozyuzer, QM2016-5th International Conference on Quantum Metrology, Poznan, POLAND, May 11-13, 2016.

National conferences/meetings attended:

1. **22. Turkish Physical Society Conference**, Bodrum – Turkey, 14–17 September, 2004, (Oral presentation: Electrical and Optical Properties of Nd:YAG Laser Grown Si Oxides.)
2. **XI. Condensed Matter Physics Meeting** in Ankara, Ankara – Turkey, December 3th, 2004, (Oral presentation: Structural, Chemical, Electrical and Optical properties of Si oxides grown by pulsed Nd:YAG Laser)
3. **XII. Condensed Matter Physics Meeting** in Ankara, Ankara – Turkey, Nov 18th 2005, (Oral presentation: Structural and optical characteristics of tantalum oxide grown by pulsed Nd:YAG laser oxidation).
4. **NANO-TRII, Nanoscience and Nanotechnology Meeting**, 3-5 May, 2006, METU, Ankara-Turkey.
5. **XIII. Condensed Matter Physics Meeting** in Ankara, ODTU – Turkey, Nov 3rd 2006, (Poster presentation: Thickness distribution, structural, electrical and dielectrical properties of Nd:YAG laser grown tantalum oxide films).

6. **NanoTR-III: Nanoscience and Nanotechnology Conference**- June 11-14, 2007, Bilkent University, Ankara-Turkey, (Oral presentation: Anodic Oxidation of Ta and Hf thin films on Si using SPM Lithography Technique).
7. **24. Turkish Physical Society Conference**, Inonu University, Malatya – Turkey, 28–31 August, 2007, (Oral presentation: Interfacial and Structural Properties of sputtered HfO₂ layers).
8. **XIV. Condensed Matter Physics Meeting**- Nov 3rd 2007, Ankara, Hacettepe, Turkey, (Oral presentation: Interfacial and Structural Properties of sputtered HfO₂ layers).
9. **NanoTR-IV: The 4th Nanoscience and Nanotechnology Conference**- 9-13 June 2008, İstanbul Teknik University, ISTANBUL – TURKEY (Oral Presentation: “Preparation of ZrO_x Nanostructures using Scanning Probe Lithography (SPL)” by Serkan Buyukkose, Salih Okur and Gulnur Aygun, Abstract Book Page: 56)
10. **TFD-25: 25th Turkish Physical Society Conference**- 25-29 August 2008, Bodrum-TURKEY. (Oral Presentation: “Anodic oxidation nanolithography on Ta, Hf and Zr thin films using scanning probe microscope (SPM)” by Serkan Buyukkose, Salih Okur, S. Tari and Gulnur Aygun, Abstract Book Page: 94).
11. **NanoTR-V: The 5th Nanoscience and Nanotechnology Conference**- 8-12 June 2009, Eskişehir-Turkey (Oral Presentation: “In-situ Spectroscopic Ellipsometer Characterization of Thin HfO₂ Layers Grown by Reactive Magnetron Sputtering Technique” by A. Cantas and G. Aygun).
12. **NANOMATS 2009: International Conference on Nanomaterials and Nanosystems**- 10-13 Ağustos 2009, ITU Ayazaga Campus, İstanbul, TURKEY (Poster Presentation: “In-situ spectroscopic ellipsometer characterization of thin HfO₂ layers grown by reactive magnetron sputtering technique” Ayten Candaş, Gülnur Aygün).
13. **NANOMATS 2009: International Conference on Nanomaterials and Nanosystems**- 10-13 Ağustos 2009, ITU Ayazaga Campus, İstanbul, TURKEY (Poster Presentation: “Growth and Characterization of ITO Thin Films on Very Large Areas” O. Tuna, Y. Selamet, G. Aygun, L. Ozyuzer).
14. **ECASIA'09: 13th European Conference on Applications of Surface and Interface Analysis**- 18-23 October 2009, Antalya, TUKEY (Poster Presentation: “The Characterization of Thin HfO₂ layers by in-situ Spectroscopic Ellipsometry” by A. Cantas and G. Aygun).
15. **NanoTR6: The 6th Nanoscience and Nanotechnology Conference**- 15-18 June 2010, IZTECH Physics Department, Urla, Izmir, TURKEY (“**Interfacial and Structural Properties of sputtered HfO₂ layers**” by G. Aygun and A. Cantas).

16. **NanoTR6: The 6th Nanoscience and Nanotechnology Conference**- 15-18 June 2010, IZTECH Physics Department, Urla, Izmir, TURKEY (**“Depth profile study of thin HfO₂ layers by an In-situ Spectroscopic Ellipsometry”** by A. Cantas and G. Aygun).