

Prof. KAŞIF TEKER

Personal Information

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Biography

He graduated from METU Department of Metallurgical and Materials Engineering. He completed his MS at Ohio State University and his PhD at Case Western Reserve University in Materials Science and Engineering. After completion of his PhD, he has worked as a scientist in semiconductor industry in US. He has also served as a faculty at Frostburg State University (eight years) -Maryland and as a research scientist at University of Delaware. His research interests include nanoelectronics, nanophotonics, III-V compound semiconductor devices (HBT, HEMT, MOSFET, photodetectors), nano- microfabrication (MOCVD, MBE, PVD etc.), semiconductor nanowire device fabrication, and nanowire-based sensors. He is the founder of the Advanced Micro- and Nano-Devices Laboratory.

Research Areas

Optoelectronic Materials and Devices, Semiconducting Materials and Devices, Material science and engineering, Engineering and Technology

Academic Titles / Tasks

Professor, Marmara University, Faculty Of Engineering, Metallurgical And Material Engineering, 2020 - Continues

Professor, Istanbul Sehir University, Faculty Of Engineering And Natural Sciences, Department Of Electrical And Electronics Engineering, 2016 - 2020

Associate Professor, Istanbul Sehir University, Faculty Of Engineering And Natural Sciences, 2012 - 2016

Associate Professor, Frostburg State University, Physics and Engineering, 2011 - 2014

Assistant Professor, Frostburg State University, Physics and Engineering, 2005 - 2011

Researcher, University of Delaware, Electrical and Computer Engineering, 2003 - 2005

Engineer, International Quantum Epitaxy (IQE), Inc., 2001 - 2003

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Improving detectivity of self-powered GaN ultraviolet photodetector by nickel nanoparticles**
Teker K., Hocaoglu A., Yildirim M. A.
APPLIED PHYSICS B-LASERS AND OPTICS, vol.127, no.1, 2021 (Journal Indexed in SCI)
- II. **Effect of pH on transport characteristics of silicon carbide nanowire field-effect transistor (SiCNW-FET)**
Awais M., Mousa H., TEKER K.
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, 2021 (Journal Indexed in SCI)
- III. **Transport Characteristics of Gallium Nitride Nanowire Field-Effect Transistor (GaN-NWFET) for High Temperature Electronics**
Yildirim M. A. , TEKER K.

Nano, 2021 (Journal Indexed in SCI Expanded)

- IV. **Impact of gold nanoparticles on low-voltage operating GaN ultraviolet photodetector**
TEKER K., Alkhaldi A.
OPTICAL ENGINEERING, vol.59, no.12, 2020 (Journal Indexed in SCI)
- V. **Low-Power-Operating 3C-SiC Ultraviolet Photodetector for Elevated Temperature Applications**
Teker K., Mousa H.
JOURNAL OF ELECTRONIC MATERIALS, vol.49, is.6, pp.3813-3818, 2020 (Journal Indexed in SCI)
- VI. **Performance enhancement of 3C-SiC thin film UV photodetector via gold nanoparticles**
Mousa H., Yildirim M. A. , Teker K.
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.34, no.9, 2019 (Journal Indexed in SCI)
- VII. **UV-induced photosensing characteristics of SiC and GaN nanowires**
Teker K., Ali Y. A. , Uzun A.
SENSOR REVIEW, vol.39, is.4, pp.488-494, 2019 (Journal Indexed in SCI)
- VIII. **Fabrication of ultraviolet photodetector with aluminum nitride nanowire networks via direct transfer method**
Ali Y. A. , Teker K.
MICROELECTRONIC ENGINEERING, vol.211, pp.26-28, 2019 (Journal Indexed in SCI)
- IX. **Impact of channel scaling on performance of single SiC nanowire UV photodetector**
Uzun A., Teker K.
JOURNAL OF NANOPHOTONICS, vol.13, is.2, 2019 (Journal Indexed in SCI)
- X. **Dielectrophoretic Assembly of Aluminum Nitride (AlN) Single Nanowire Deep Ultraviolet Photodetector**
Teker K.
JOURNAL OF NANO RESEARCH, vol.60, pp.86-93, 2019 (Journal Indexed in SCI)
- XI. **Silicon carbide nanowire field effect transistors with high on/off current ratio**
Uzun A., Teker K.
MICROELECTRONIC ENGINEERING, vol.205, pp.59-62, 2019 (Journal Indexed in SCI)
- XII. **An Ultra-Sensitive Optical Ring-Based Micro-Resonator Model towards Nanoparticle and Protein Detection**
Ahmeti F., Teker K.
JOURNAL OF NANO RESEARCH, vol.55, pp.57-65, 2018 (Journal Indexed in SCI)
- XIII. **Photoresponse characteristics of silicon carbide nanowires**
Teker K.
MICROELECTRONIC ENGINEERING, vol.162, pp.79-81, 2016 (Journal Indexed in SCI)
- XIV. **Single source fabrication of SiC nanowires and FTIR spectroscopy**
Teker K., Abdurazik D.
Journal of Optoelectronics and Advanced Materials, vol.18, pp.510-514, 2016 (Journal Indexed in SCI)
- XV. **Aluminium nitride nanowire array films for nanomanufacturing applications**
Teker K.
MATERIALS SCIENCE AND TECHNOLOGY, vol.31, no.15, pp.1832-1836, 2015 (Journal Indexed in SCI)
- XVI. **Gallium nitride nanowire devices and photoelectric properties**
Teker K.
SENSORS AND ACTUATORS A-PHYSICAL, vol.216, pp.142-146, 2014 (Journal Indexed in SCI)
- XVII. **Density and morphology adjustments of gallium nitride nanowires**
Teker K.
APPLIED SURFACE SCIENCE, vol.283, pp.1065-1070, 2013 (Journal Indexed in SCI)
- XVIII. **Bioconjugated carbon nanotubes for targeting cancer biomarkers**
Teker K.
MATERIALS SCIENCE AND ENGINEERING B-ADVANCED FUNCTIONAL SOLID-STATE MATERIALS, vol.153, pp.83-87, 2008 (Journal Indexed in SCI)
- XIX. **Biomolecular tuning of electronic transport properties of carbon nanotubes via antibody**

functionalization

Teker K., Wickstrom E., Panchapakesan B.

IEEE SENSORS JOURNAL, vol.6, is.6, pp.1422-1428, 2006 (Journal Indexed in SCI)

XX. **Selective epitaxial growth of 3C-SiC on patterned Si using hexamethyldisilane by APCVD**

Teker K.

JOURNAL OF CRYSTAL GROWTH, vol.257, pp.245-254, 2003 (Journal Indexed in SCI)

XXI. **Epitaxial growth of 3C-SiC on Si(001) using hexamethyldisilane and comparison with growth on Si(111)**

Teker K., Jacob C., Chung J., Hong M.

THIN SOLID FILMS, vol.371, pp.53-60, 2000 (Journal Indexed in SCI)

Articles Published in Other Journals

I. **Confocal Microscopy of Bioconjugated Carbon Nanotubes for Biosensor Applications**

Teker K.

Sensors & Transducers Journal, vol.88, is.2, pp.1-8, 2008 (Journal Indexed in ESCI)

II. **Single-wall carbon nanotubes with adsorbed antibodies detect live breast cancer cells**

Teker K.

Nanobiotechnology, vol.1, is.4, pp.353-360, 2005 (Journal Indexed in ESCI)

III. **Single-wall carbon nanotube nanobomb agents for killing breast cancer cells**

Teker K.

Nanobiotechnology, vol.1, is.2, pp.133-139, 2005 (Journal Indexed in ESCI)

IV. **Applications of carbon nanotubes for cancer research**

Teker K.

Nanobiotechnology, vol.1, is.2, pp.171-182, 2005 (Journal Indexed in ESCI)

V. **Epitaxial growth of SiC on AlN/Sapphire using hexamethyldisilane by MOVPE**

Teker K., Lee K. H., Pirouz P., Jacob C., Nishino S.

Materials Research Society Symposium-Proceedings, vol.640, 2001 (Refereed Journals of Other Institutions)

Refereed Congress / Symposium Publications in Proceedings

I. **A model for an Optical Ring Micro resonator towards Nanoparticle Detection**

Ahmeti F., Teker K.

11th Annual TechConnect World Innovation Conference and Expo, Held Jointly with the 20th Annual Nanotech Conference and Expo, and the 2017 National SBIR/STTR Conference, Washington, United States Of America, 14 - 17 May 2017, vol.3, pp.254-257

II. **Indium nitride nanowire growth by chemical vapor deposition and electrical characterization**

Teker K., Ali Y. A., Otto J.

11th Annual TechConnect World Innovation Conference and Expo, Held Jointly with the 20th Annual Nanotech Conference and Expo, and the 2017 National SBIR/STTR Conference, Washington, United States Of America, 14 - 17 May 2017, vol.4, pp.198-201

III. **Fourier transform infrared spectroscopy of silicon carbide nanowires**

Teker K., Abdurazik D.

10th Annual TechConnect World Innovation Conference and Expo, Held Jointly with the 19th Annual Nanotech Conference and Expo, and the 2016 National SBIR/STTR Conference, Washington, United States Of America, 22 - 25 May 2016, vol.4, pp.51-54

IV. **Photoconductivity of GaN nanowires**

Teker K., Otto J., Siemann A.

Nanotechnology 2013: Electronics, Devices, Fabrication, MEMS, Fluidics and Computational - 2013 NSTI

Nanotechnology Conference and Expo, NSTI-Nanotech 2013, Washington, United States Of America, 12 - 16 May 2013, vol.2, pp.60-63

- V. **Photoconductivity of Catalyst-Free Grown Aluminum Nitride Nanowires**
Teker K., Otto J., Siemann A.
Conference on Nanotechnology VI, Grenoble, France, 24 - 25 April 2013, vol.8766
- VI. **Morphology variations of GaN nanowires and devices**
Teker K., Otto J.
Materials Science and Technology Conference and Exhibition 2012, MS and T 2012, Pittsburgh, PA, United States Of America, 7 - 11 October 2012, vol.1, pp.371-377
- VII. **Manipulating 3C-SiC nanowire morphology through gas flow dynamics**
Teker K., Otto J. M.
2011 MRS Fall Meeting, Boston, MA, United States Of America, 28 November - 02 December 2011, vol.1396, pp.237-242
- VIII. **Comparison of aluminum nitride nanowire growth with and without catalysts via chemical vapor deposition**
Teker K., Oxenham J. A.
2011 MRS Spring Meeting, San Francisco, CA, United States Of America, 25 - 29 April 2011, vol.1324, pp.17-22
- IX. **The impact of hands-on experience in undergraduate nanotechnology education**
Oxenham J. A. , Teker K.
2010 MRS Fall Meeting, Boston, MA, United States Of America, 29 November - 03 December 2010, vol.1320, pp.42-47
- X. **Growth of ultra-high density 3C-SiC nanowires via single source CVD**
Teker K., Oxenham J. A.
2011 MRS Spring Meeting, San Francisco, CA, United States Of America, 25 - 29 April 2011, vol.1350, pp.63-68
- XI. **Transition from microscale-faceted structures to ultra-dense GaN nanowires**
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2010 MRS Fall Meeting, Boston, MA, United States Of America, 29 November - 03 December 2010, vol.1302, pp.31-36
- XII. **A scheme for blocking non-specific antibody binding on single wall carbon nanotubes**
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2008 MRS Spring Meeting, San Francisco, CA, United States Of America, 24 - 28 March 2008, vol.1092, pp.8-13
- XIII. **Detection of live breast cancer cells using carbon nanotube devices**
Teker K., Cesarone G., Wickstrom E., Panchapakesan B.
2006 NSTI Nanotechnology Conference and Trade Show - NSTI Nanotech 2006 Technical Proceedings, Boston, MA, United States Of America, 7 - 11 May 2006, vol.2, pp.33-36
- XIV. **Electronic sensing of antibodies using carbon nanotube devices**
Teker K., Sivakumar K., Wickstro E., Panchapakesan B.
2005 NSTI Nanotechnology Conference and Trade Show - NSTI Nanotech 2005, Anaheim, CA, United States Of America, 8 - 12 May 2005, pp.43-46
- XV. **Single wall carbon nanotubes with adsorbed monoclonal antibodies detect breast cancer cells.**
Panchapakesan B., Cesarone G., Teker K., Wickstrom E.
AACR/NCI/EORTC International Conference on Molecular Targets and Cancer Therapeutics, Pennsylvania, United States Of America, 14 - 18 November 2005, vol.11
- XVI. **Antibody functionalization of carbon nanotubes for breast cancer applications**
Teker K., Sirdeshmukh R., Panchapakesan B.
IEEE Sensors 2004, Vienna, Austria, 24 - 27 October 2004, vol.2, pp.814-817
- XVII. **Functionalization of carbon nanotubes with antibodies for breast cancer detection applications**
Sirdeshmukh R., Teker K., Panchapakesan B.
Proceedings - 2004 International Conference on MEMS, NANO and Smart Systems, ICMENS 2004, Banff, Canada, 25 - 27 August 2004, pp.47-52
- XVIII. **Biological functionalization of carbon nanotubes**

Sirdeshmukh R., Teker K., Panchapakesan B.

Biological and Bioinspired Materials and Devices, San Francisco, CA, United States Of America, 13 - 16 April 2004, vol.823, pp.133-138

XIX. Production of next generation InP-HBT epiwafers by MBE

Lubyshev D., Malis O., Teker K., Wu Y., Fastenau J., Fang X., Doss C., Cornfeld A., Liu W.

2003 International Conference Indium Phosphide and Related Materials, Santa Barbara, CA, United States Of America, 12 - 16 May 2003, pp.385-388

XX. Effect of TMG addition on the epitaxial growth of 3C-SiC on Si(100) and Si(111) using hexamethyldisilane

Lee K., Teker K., Zhang M., Chung J., Pirouz P.

Silicon Carbide- Materials, Processing and Devices, Boston, MA, United States Of America, 27 - 29 November 2000, vol.640

XXI. Epitaxial growth of SiC on AlN/Sapphire using hexamethyldisilane by MOVPE

Teker K., Lee K., Jacob C., Nishino S., Pirouz P.

Silicon Carbide- Materials, Processing and Devices, Boston, MA, United States Of America, 27 - 29 November 2000, vol.640

XXII. Comparison of different substrate pre-treatments on the quality of gan film growth on 6H-, 4H-, and 3C-SiC

Lee K., Hong M., Teker K., Jacob C., Pirouz P.

Wide-Bandgap Electronic Devices, San Francisco, CA, United States Of America, 24 - 27 April 2000, vol.622

Citations

Total Citations (WOS):106

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