

Ahmad E Islam

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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|-------------------|-------------------------|----------------|-----------------|
| 71 papers | 5,618 citations | 25 h-index | 74 g-index |
| 78 ext. papers | 6,621 ext. citations | 8.2 avg, IF | 4.97 L-index |

| # | Paper | IF | Citations |
|----|--|------|-----------|
| 71 | Biomarkers and Detection Platforms for Human Health and Performance Monitoring: A Review.. <i>Advanced Science</i> , 2022 , e2104426 | 13.6 | 9 |
| 70 | Gallium oxide power electronics. <i>APL Materials</i> , 2022 , 10, 029201 | 5.7 | 33 |
| 69 | Defect engineering of graphene using electron-beam chemistry with radiolyzed water. <i>Carbon</i> , 2020 , 166, 446-455 | 10.4 | 4 |
| 68 | Efficient Closed-loop Maximization of Carbon Nanotube Growth Rate using Bayesian Optimization. <i>Scientific Reports</i> , 2020 , 10, 9040 | 4.9 | 12 |
| 67 | Magnesia and Magnesium Aluminate Catalyst Substrates for Carbon Nanotube Carpet Growth. <i>ACS Applied Nano Materials</i> , 2020 , 3, 1830-1840 | 5.6 | 2 |
| 66 | Graphene-Based Electrolyte-Gated Field-Effect Transistors for Potentiometrically Sensing Neuropeptide Y in Physiologically Relevant Environments. <i>ACS Applied Nano Materials</i> , 2020 , 3, 5088-5097 | 5.6 | 9 |
| 65 | Experimental Verification of Current Conduction Mechanism for a Lithium Niobate Based Memristor. <i>ECS Journal of Solid State Science and Technology</i> , 2020 , 9, 103003 | 2 | 4 |
| 64 | Strain engineering and epitaxial stabilization of halide perovskites. <i>Nature</i> , 2020 , 577, 209-215 | 50.4 | 213 |
| 63 | Toward high voltage radio frequency devices in Ga ₂ O ₃ . <i>Applied Physics Letters</i> , 2020 , 117, 242101 | 3.4 | 6 |
| 62 | Spectroscopic evaluation of charge-transfer doping and strain in graphene/MoS ₂ heterostructures. <i>Physical Review B</i> , 2019 , 99, | 3.3 | 31 |
| 61 | In Operando Observation of Neuropeptide Capture and Release on Graphene Field-Effect Transistor Biosensors with Picomolar Sensitivity. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 13927-13934 | 2.5 | 14 |
| 60 | Dynamics of cleaning, passivating and doping monolayer MoS ₂ by controlled laser irradiation. <i>2D Materials</i> , 2019 , 6, 045031 | 5.9 | 24 |
| 59 | Water-assisted, electron-beam induced activation of carbon nanotube catalyst supports for mask-less, resist-free patterning. <i>Carbon</i> , 2018 , 135, 270-277 | 10.4 | 4 |
| 58 | Carbon Nanotubes and Related Nanomaterials: Critical Advances and Challenges for Synthesis toward Mainstream Commercial Applications. <i>ACS Nano</i> , 2018 , 12, 11756-11784 | 16.7 | 239 |
| 57 | Enhanced Conductivity, Adhesion, and Environmental Stability of Printed Graphene Inks with Nitrocellulose. <i>Chemistry of Materials</i> , 2017 , 29, 2332-2340 | 9.6 | 111 |
| 56 | Insight on Structure of Water and Ice Next to Graphene Using Surface-Sensitive Spectroscopy. <i>ACS Nano</i> , 2017 , 11, 4899-4906 | 16.7 | 44 |
| 55 | In situ thermal oxidation kinetics in few layer MoS ₂ . <i>2D Materials</i> , 2017 , 4, 025058 | 5.9 | 36 |

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| 54 | Atomic level cleaning of poly-methyl-methacrylate residues from the graphene surface using radiolized water at high temperatures. <i>Applied Physics Letters</i> , 2017 , 111, 103101 | 3.4 | 12 |
| 53 | Visualization of peptide-peptide interactions in FET biosensors with liquid-cell TEM. <i>Microscopy and Microanalysis</i> , 2017 , 23, 890-891 | 0.5 | |
| 52 | The Stability of Sapphire in the Presence of Water: an Environmental TEM Study. <i>Microscopy and Microanalysis</i> , 2017 , 23, 964-965 | 0.5 | 1 |
| 51 | Electron-Beam Induced Activation of Catalyst Supports for CNT Growth. <i>Microscopy and Microanalysis</i> , 2017 , 23, 1932-1933 | 0.5 | |
| 50 | . <i>IEEE Transactions on Device and Materials Reliability</i> , 2016 , 16, 647-666 | 1.6 | 17 |
| 49 | Modeling Graphene with Nanoholes: Structure and Characterization by Raman Spectroscopy with Consideration for Electron Transport. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 5371-5383 | 3.8 | 12 |
| 48 | Understanding properties of engineered catalyst supports using contact angle measurements and X-ray reflectivity. <i>Nanoscale</i> , 2016 , 8, 2927-36 | 7.7 | 7 |
| 47 | Reaction-Diffusion Model. <i>Springer Series in Advanced Microelectronics</i> , 2016 , 181-207 | 1 | 17 |
| 46 | Photo-thermal oxidation of single layer graphene. <i>RSC Advances</i> , 2016 , 6, 42545-42553 | 3.7 | 26 |
| 45 | Defect-induced Raman spectroscopy in single-layer graphene with boron and nitrogen substitutional defects by theoretical investigation. <i>Chemical Physics Letters</i> , 2016 , 663, 79-83 | 2.5 | 2 |
| 44 | A Raman spectroscopy signature for characterizing defective single-layer graphene: Defect-induced I(D)/I(D?) intensity ratio by theoretical analysis. <i>Carbon</i> , 2015 , 90, 53-62 | 10.4 | 31 |
| 43 | Direct current injection and thermocapillary flow for purification of aligned arrays of single-walled carbon nanotubes. <i>Journal of Applied Physics</i> , 2015 , 117, 134303 | 2.5 | 12 |
| 42 | Chiral angle-dependent defect evolution in CVD-grown single-walled carbon nanotubes. <i>Carbon</i> , 2015 , 95, 287-291 | 10.4 | 12 |
| 41 | Recent Progress in Obtaining Semiconducting Single-Walled Carbon Nanotubes for Transistor Applications. <i>Advanced Materials</i> , 2015 , 27, 7908-37 | 24 | 52 |
| 40 | Microwave purification of large-area horizontally aligned arrays of single-walled carbon nanotubes. <i>Nature Communications</i> , 2014 , 5, 5332 | 17.4 | 37 |
| 39 | Engineering the activity and lifetime of heterogeneous catalysts for carbon nanotube growth via substrate ion beam bombardment. <i>Nano Letters</i> , 2014 , 14, 4997-5003 | 11.5 | 17 |
| 38 | Laser-induced nanoscale thermocapillary flow for purification of aligned arrays of single-walled carbon nanotubes. <i>ACS Nano</i> , 2014 , 8, 12641-9 | 16.7 | 36 |
| 37 | Electrostatic dimension of aligned-array carbon nanotube field-effect transistors. <i>ACS Nano</i> , 2013 , 7, 1299-308 | 16.7 | 15 |

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|----|---|------|------|
| 36 | Using nanoscale thermocapillary flows to create arrays of purely semiconducting single-walled carbon nanotubes. <i>Nature Nanotechnology</i> , 2013 , 8, 347-55 | 28.7 | 144 |
| 35 | Variability and Reliability of Single-Walled Carbon Nanotube Field Effect Transistors. <i>Electronics (Switzerland)</i> , 2013 , 2, 332-367 | 2.6 | 9 |
| 34 | A Comparative Study of Different Physics-Based NBTI Models. <i>IEEE Transactions on Electron Devices</i> , 2013 , 60, 901-916 | 2.9 | 241 |
| 33 | On the electro-mechanical reliability of NEMFET as an analog/digital switch 2012 , | | 3 |
| 32 | Quantitative thermal imaging of single-walled carbon nanotube devices by scanning Joule expansion microscopy. <i>ACS Nano</i> , 2012 , 6, 10267-75 | 16.7 | 23 |
| 31 | Electroluminescence in aligned arrays of single-wall carbon nanotubes with asymmetric contacts. <i>ACS Nano</i> , 2012 , 6, 7981-8 | 16.7 | 28 |
| 30 | Sources of Hysteresis in Carbon Nanotube Field-Effect Transistors and Their Elimination Via Methylsiloxane Encapsulants and Optimized Growth Procedures. <i>Advanced Functional Materials</i> , 2012 , 22, 2276-2284 | 15.6 | 93 |
| 29 | Effect of variations in diameter and density on the statistics of aligned array carbon-nanotube field effect transistors. <i>Journal of Applied Physics</i> , 2012 , 111, 054511 | 2.5 | 20 |
| 28 | Epidermal electronics. <i>Science</i> , 2011 , 333, 838-43 | 33.3 | 3216 |
| 27 | A critical re-evaluation of the usefulness of R-D framework in predicting NBTI stress and recovery 2011 , | | 59 |
| 26 | Analyzing the distribution of threshold voltage degradation in nanoscale transistors by using reaction-diffusion and percolation theory. <i>Journal of Computational Electronics</i> , 2011 , 10, 341-351 | 1.8 | 11 |
| 25 | A self-consistent algorithm to extract interface trap states of MOS devices on alternative high-mobility substrates. <i>Solid-State Electronics</i> , 2011 , 56, 141-147 | 1.7 | 7 |
| 24 | Characterization and modeling of NBTI stress, recovery, material dependence and AC degradation using R-D framework 2011 , | | 6 |
| 23 | Experimental identification of unique oxide defect regions by characteristic response of charge pumping 2011 , | | 4 |
| 22 | Essential aspects of Negative Bias Temperature Instability (NBTI). <i>ECS Transactions</i> , 2011 , 35, 145-174 | 1 | 8 |
| 21 | A multi-probe correlated bulk defect characterization scheme for ultra-thin high- κ dielectric 2010 , | | 2 |
| 20 | Mobility enhancement due to charge trapping & defect generation: Physics of self-compensated BTI 2010 , | | 4 |
| 19 | A Theoretical Study of Negative Bias Temperature Instability in p-Type NEMFET 2010 , | | 3 |

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|----|---|-----|-----|
| 18 | Material Dependence of Negative Bias Temperature Instability (NBTI) Stress and Recovery in SiON p-MOSFETs. <i>ECS Transactions</i> , 2009 , 19, 243-263 | 1 | 2 |
| 17 | Isolation of NBTI Stress Generated Interface Trap and Hole-Trapping Components in PNO p-MOSFETs. <i>IEEE Transactions on Electron Devices</i> , 2009 , 56, 236-242 | 2.9 | 94 |
| 16 | A Common Framework of NBTI Generation and Recovery in Plasma-Nitrided SiON p-MOSFETs. <i>IEEE Electron Device Letters</i> , 2009 , 30, 978-980 | 4.4 | 12 |
| 15 | 2009 , | | 11 |
| 14 | On the differences between ultra-fast NBTI measurements and Reaction-Diffusion theory 2009 , | | 15 |
| 13 | Exploring the Capability of Multifrequency Charge Pumping in Resolving Location and Energy Levels of Traps Within Dielectric. <i>IEEE Transactions on Electron Devices</i> , 2008 , 55, 3421-3431 | 2.9 | 38 |
| 12 | Optimization of Gate Leakage and NBTI for Plasma-Nitrided Gate Oxides by Numerical and Analytical Models. <i>IEEE Transactions on Electron Devices</i> , 2008 , 55, 1143-1152 | 2.9 | 4 |
| 11 | Mobility degradation due to interface traps in plasma oxynitride PMOS devices 2008 , | | 27 |
| 10 | On the possibility of degradation-free field effect transistors. <i>Applied Physics Letters</i> , 2008 , 92, 173504 | 3.4 | 14 |
| 9 | Separation method of hole trapping and interface trap generation and their roles in NBTI reaction-diffusion model 2008 , | | 28 |
| 8 | On the Physical Mechanism of NBTI in Silicon Oxynitride p-MOSFETs: Can Differences in Insulator Processing Conditions Resolve the Interface Trap Generation versus Hole Trapping Controversy? 2007 , | | 94 |
| 7 | . <i>IEEE Transactions on Electron Devices</i> , 2007 , 54, 2143-2154 | 2.9 | 189 |
| 6 | Material Dependence of NBTI Physical Mechanism in Silicon Oxynitride (SiON) p-MOSFETs: A Comprehensive Study by Ultra-Fast On-The-Fly (UF-OTF) IDLIN Technique 2007 , | | 17 |
| 5 | Critical analysis of short-term negative bias temperature instability measurements: Explaining the effect of time-zero delay for on-the-fly measurements. <i>Applied Physics Letters</i> , 2007 , 90, 083505 | 3.4 | 23 |
| 4 | Theory and Practice of On-the-fly and Ultra-fast VT Measurements for NBTI Degradation: Challenges and Opportunities 2007 , | | 13 |
| 3 | Characterization and Estimation of Circuit Reliability Degradation under NBTI using On-Line IDDQ Measurement. <i>Proceedings - Design Automation Conference</i> , 2007 , | | 5 |
| 2 | Accumulation gate capacitance of MOS devices with ultrathin high- κ gate dielectrics: modeling and characterization. <i>IEEE Transactions on Electron Devices</i> , 2006 , 53, 1364-1372 | 2.9 | 12 |
| 1 | Gate Leakage vs. NBTI in Plasma Nitrided Oxides: Characterization, Physical Principles, and Optimization 2006 , | | 37 |

