

Ahmad E Islam

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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.

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	Epidermal electronics. <i>Science</i> , 2011 , 333, 838-43	33.3	3216
70	A Comparative Study of Different Physics-Based NBTI Models. <i>IEEE Transactions on Electron Devices</i> , 2013 , 60, 901-916	2.9	241
69	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
68	Strain engineering and epitaxial stabilization of halide perovskites. <i>Nature</i> , 2020 , 577, 209-215	50.4	213
67	. <i>IEEE Transactions on Electron Devices</i> , 2007 , 54, 2143-2154	2.9	189
66	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
65	Enhanced Conductivity, Adhesion, and Environmental Stability of Printed Graphene Inks with Nitrocellulose. <i>Chemistry of Materials</i> , 2017 , 29, 2332-2340	9.6	111
64	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
63	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
62	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
61	A critical re-evaluation of the usefulness of R-D framework in predicting NBTI stress and recovery 2011 ,		59
60	Recent Progress in Obtaining Semiconducting Single-Walled Carbon Nanotubes for Transistor Applications. <i>Advanced Materials</i> , 2015 , 27, 7908-37	24	52
59	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
58	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
57	Microwave purification of large-area horizontally aligned arrays of single-walled carbon nanotubes. <i>Nature Communications</i> , 2014 , 5, 5332	17.4	37
56	Gate Leakage vs. NBTI in Plasma Nitrided Oxides: Characterization, Physical Principles, and Optimization 2006 ,		37
55	In situ thermal oxidation kinetics in few layer MoS ₂ . <i>2D Materials</i> , 2017 , 4, 025058	5.9	36

54	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
53	EGallium oxide power electronics. <i>APL Materials</i> , 2022 , 10, 029201	5.7	33
52	Spectroscopic evaluation of charge-transfer doping and strain in graphene/MoS2 heterostructures. <i>Physical Review B</i> , 2019 , 99,	3.3	31
51	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
50	Electroluminescence in aligned arrays of single-wall carbon nanotubes with asymmetric contacts. <i>ACS Nano</i> , 2012 , 6, 7981-8	16.7	28
49	Separation method of hole trapping and interface trap generation and their roles in NBTI reaction-diffusion model 2008 ,		28
48	Mobility degradation due to interface traps in plasma oxynitride PMOS devices 2008 ,		27
47	Photo-thermal oxidation of single layer graphene. <i>RSC Advances</i> , 2016 , 6, 42545-42553	3.7	26
46	Dynamics of cleaning, passivating and doping monolayer MoS 2 by controlled laser irradiation. <i>2D Materials</i> , 2019 , 6, 045031	5.9	24
45	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
44	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
43	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
42	. <i>IEEE Transactions on Device and Materials Reliability</i> , 2016 , 16, 647-666	1.6	17
41	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
40	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
39	Reaction-Diffusion Model. <i>Springer Series in Advanced Microelectronics</i> , 2016 , 181-207	1	17
38	Electrostatic dimension of aligned-array carbon nanotube field-effect transistors. <i>ACS Nano</i> , 2013 , 7, 1299-308	16.7	15
37	On the differences between ultra-fast NBTI measurements and Reaction-Diffusion theory 2009 ,		15

- 36 In Operando Observation of Neuropeptide Capture and Release on Graphene Field-Effect Transistor Biosensors with Picomolar Sensitivity. *ACS Applied Materials & Interfaces*, **2019**, 11, 13927-13934^{2.5} 14
- 35 On the possibility of degradation-free field effect transistors. *Applied Physics Letters*, **2008**, 92, 173504 3.4 14
- 34 Theory and Practice of On-the-fly and Ultra-fast VT Measurements for NBTI Degradation: Challenges and Opportunities **2007**, 13
- 33 Direct current injection and thermocapillary flow for purification of aligned arrays of single-walled carbon nanotubes. *Journal of Applied Physics*, **2015**, 117, 134303 2.5 12
- 32 Chiral angle-dependent defect evolution in CVD-grown single-walled carbon nanotubes. *Carbon*, **2015**, 95, 287-291 10.4 12
- 31 Efficient Closed-loop Maximization of Carbon Nanotube Growth Rate using Bayesian Optimization. *Scientific Reports*, **2020**, 10, 9040 4.9 12
- 30 Modeling Graphene with Nanoholes: Structure and Characterization by Raman Spectroscopy with Consideration for Electron Transport. *Journal of Physical Chemistry C*, **2016**, 120, 5371-5383 3.8 12
- 29 Atomic level cleaning of poly-methyl-methacrylate residues from the graphene surface using radiolized water at high temperatures. *Applied Physics Letters*, **2017**, 111, 103101 3.4 12
- 28 A Common Framework of NBTI Generation and Recovery in Plasma-Nitrided SiON p-MOSFETs. *IEEE Electron Device Letters*, **2009**, 30, 978-980 4.4 12
- 27 Accumulation gate capacitance of MOS devices with ultrathin high- κ gate dielectrics: modeling and characterization. *IEEE Transactions on Electron Devices*, **2006**, 53, 1364-1372 2.9 12
- 26 Analyzing the distribution of threshold voltage degradation in nanoscale transistors by using reaction-diffusion and percolation theory. *Journal of Computational Electronics*, **2011**, 10, 341-351 1.8 11
- 25 **2009**, 11
- 24 Graphene-Based Electrolyte-Gated Field-Effect Transistors for Potentiometrically Sensing Neuropeptide Y in Physiologically Relevant Environments. *ACS Applied Nano Materials*, **2020**, 3, 5088-5097^{5.6} 9
- 23 Variability and Reliability of Single-Walled Carbon Nanotube Field Effect Transistors. *Electronics (Switzerland)*, **2013**, 2, 332-367 2.6 9
- 22 Biomarkers and Detection Platforms for Human Health and Performance Monitoring: A Review.. *Advanced Science*, **2022**, e2104426 13.6 9
- 21 Essential aspects of Negative Bias Temperature Instability (NBTI). *ECS Transactions*, **2011**, 35, 145-174 1 8
- 20 Understanding properties of engineered catalyst supports using contact angle measurements and X-ray reflectivity. *Nanoscale*, **2016**, 8, 2927-36 7.7 7
- 19 A self-consistent algorithm to extract interface trap states of MOS devices on alternative high-mobility substrates. *Solid-State Electronics*, **2011**, 56, 141-147 1.7 7

18	Characterization and modeling of NBTI stress, recovery, material dependence and AC degradation using R-D framework 2011 ,		6
17	Toward high voltage radio frequency devices in EGa2O3. <i>Applied Physics Letters</i> , 2020 , 117, 242101	3.4	6
16	Characterization and Estimation of Circuit Reliability Degradation under NBTI using On-Line IDDQ Measurement. <i>Proceedings - Design Automation Conference</i> , 2007 ,		5
15	Defect engineering of graphene using electron-beam chemistry with radiolyzed water. <i>Carbon</i> , 2020 , 166, 446-455	10.4	4
14	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
13	Mobility enhancement due to charge trapping & defect generation: Physics of self-compensated BTI 2010 ,		4
12	Experimental identification of unique oxide defect regions by characteristic response of charge pumping 2011 ,		4
11	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
10	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
9	On the electro-mechanical reliability of NEMFET as an analog/digital switch 2012 ,		3
8	A Theoretical Study of Negative Bias Temperature Instability in p-Type NEMFET 2010 ,		3
7	Magnesia and Magnesium Aluminate Catalyst Substrates for Carbon Nanotube Carpet Growth. <i>ACS Applied Nano Materials</i> , 2020 , 3, 1830-1840	5.6	2
6	A multi-probe correlated bulk defect characterization scheme for ultra-thin high- κ dielectric 2010 ,		2
5	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
4	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
3	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
2	Visualization of peptide-peptide interactions in FET biosensors with liquid-cell TEM. <i>Microscopy and Microanalysis</i> , 2017 , 23, 890-891	0.5	
1	Electron-Beam Induced Activation of Catalyst Supports for CNT Growth. <i>Microscopy and Microanalysis</i> , 2017 , 23, 1932-1933	0.5	

