Yang-Kyu Choi

List of Publications by Citations

393 papers	11,590 citations	51 h-index	92 g-index
432 ext. papers	13,701 ext. citations	6.1 avg, IF	6.5 L-index

#	Paper	IF	Citations
393	Metallic TiCT MXene Gas Sensors with Ultrahigh Signal-to-Noise Ratio. *ACS Nano*, **2018**, 12, 986-993	16.7	664
392	Chemical sensors based on nanostructured materials. *Sensors and Actuators B: Chemical*, **2007**, 122, 659-671	6.1	530
391	A polydimethylsiloxane (PDMS) sponge for the selective absorption of oil from water. *ACS Applied Materials & Interfaces*, **2011**, 3, 4552-6	9.5	488
390	A dielectric-modulated field-effect transistor for biosensing. *Nature Nanotechnology*, **2007**, 2, 430-4	28.7	305
389	A robust superhydrophobic and superoleophobic surface with inverse-trapezoidal microstructures on a large transparent flexible substrate. *Soft Matter*, **2010**, 6, 1401	3.6	290
388	Sensitivity of Threshold Voltage to Nanowire Width Variation in Junctionless Transistors. *IEEE Electron Device Letters*, **2011**, 32, 125-127	4.4	214
387	Aspartate Aminotransferase (AST/GOT) and Alanine Aminotransferase (ALT/GPT) Detection Techniques. *Sensors*, **2006**, 6, 756-782	3.8	207
386	. *IEEE Transactions on Electron Devices*, **2001**, 48, 880-886	2.9	184
385	Self-cleaning effect of highly water-repellent microshell structures for solar cell applications. *Journal of Materials Chemistry*, **2011**, 21, 633-636		162
384	. *Proceedings of the IEEE*, **2003**, 9, 1860-1873	14.3	157
383	Fabrication of Sub-10-nm Silicon Nanowire Arrays by Size Reduction Lithography. *Journal of Physical Chemistry B*, **2003**, 107, 3340-3343	3.4	153
382	Resistive Switching Characteristics of Sol□el Zinc Oxide Films for Flexible Memory Applications. *IEEE Transactions on Electron Devices*, **2009**, 56, 696-699	2.9	144
381	A spacer patterning technology for nanoscale CMOS. *IEEE Transactions on Electron Devices*, **2002**, 49, 436-441	2.9	144
380	Double-gate nanowire field effect transistor for a biosensor. *Nano Letters*, **2010**, 10, 2934-8	11.5	139
379	Ultrathin-body SOI MOSFET for deep-sub-tenth micron era. *IEEE Electron Device Letters*, **2000**, 21, 254-255	4.4	134
378	Nature-replicated nano-in-micro structures for triboelectric energy harvesting. *Small*, **2014**, 10, 3887-94	11	133
377	Vertically stacked thin triboelectric nanogenerator for wind energy harvesting. *Nano Energy*, **2015**, 14, 201-208	17.1	132

376	Simple Analytical Bulk Current Model for Long-Channel Double-Gate Junctionless Transistors. *IEEE Electron Device Letters*, **2011**, 32, 704-706	4.4	125
375	Nanoscale CMOS spacer FinFET for the terabit era. *IEEE Electron Device Letters*, **2002**, 23, 25-27	4.4	124
374	Self-cleaning hybrid energy harvester to generate power from raindrop and sunlight. *Nano Energy*, **2015**, 12, 636-645	17.1	118
373	Resistive switching of aluminum oxide for flexible memory. *Applied Physics Letters*, **2008**, 92, 223508	3.4	112
372	High-performance nanopattern triboelectric generator by block copolymer lithography. *Nano Energy*, **2015**, 12, 331-338	17.1	101
371	A Full-Range Drain Current Model for Double-Gate Junctionless Transistors. *IEEE Transactions on Electron Devices*, **2011**, 58, 4219-4225	2.9	101
370	Sub-60-nm quasi-planar FinFETs fabricated using a simplified process. *IEEE Electron Device Letters*, **2001**, 22, 487-489	4.4	99
369	"Lock-and-key" geometry effect of patterned surfaces: wettability and switching of adhesive force. *Small*, **2009**, 5, 90-4	11	97
368	Nanogap field-effect transistor biosensors for electrical detection of avian influenza. *Small*, **2009**, 5, 2407-12	11	96
367	Investigation of Silicon Nanowire Gate-All-Around Junctionless Transistors Built on a Bulk Substrate. *IEEE Transactions on Electron Devices*, **2013**, 60, 1355-1360	2.9	89
366	Impact of contact pressure on output voltage of triboelectric nanogenerator based on deformation of interfacial structures. *Nano Energy*, **2015**, 17, 63-71	17.1	88
365	Ferrofluid-based triboelectric-electromagnetic hybrid generator for sensitive and sustainable vibration energy harvesting. *Nano Energy*, **2017**, 31, 233-238	17.1	88
364	Analytical Modeling of a Nanogap-Embedded FET for Application as a Biosensor. *IEEE Transactions on Electron Devices*, **2010**, 57, 3477-3484	2.9	81
363	First Demonstration of a Logic-Process Compatible Junctionless Ferroelectric FinFET Synapse for Neuromorphic Applications. *IEEE Electron Device Letters*, **2018**, 39, 1445-1448	4.4	81
362	Triboelectric Nanogenerator: Structure, Mechanism, and Applications. *ACS Nano*, **2021**, 15, 258-287	16.7	75
361	Nonvolatile memory based on sol-gel ZnO thin-film transistors with Ag nanoparticles embedded in the ZnO/gate insulator interface. *Applied Physics Letters*, **2008**, 93, 224106	3.4	73
360	Structure Effects on Resistive Switching of $ hbox{Al/TiO}_{x}/hbox{Al}$ Devices for RRAM Applications. *IEEE Electron Device Letters*, **2008**, 29, 331-333	4.4	72
359	A Compact Model of Quantum Electron Density at the Subthreshold Region for Double-Gate Junctionless Transistors. *IEEE Transactions on Electron Devices*, **2012**, 59, 1008-1012	2.9	70

358	Network Polydiacetylene Films: Preparation, Patterning, and Sensor Applications. *Advanced Functional Materials*, **2011**, 21, 1032-1039	15.6	69
357	Integration of field effect transistor-based biosensors with a digital microfluidic device for a lab-on-a-chip application. *Lab on A Chip*, **2012**, 12, 1533-9	7.2	68
356	A Comprehensive Study of the Resistive Switching Mechanism in $hbox{Al/TiO}_{x}/hbox{TiO}_{2}/hbox{Al}$-Structured RRAM. *IEEE Transactions on Electron Devices*, **2009**, 56, 3049-3054	2.9	68
355	Direct electrochemistry of uric acid at chemically assembled carboxylated single-walled carbon nanotubes netlike electrode. *Journal of Physical Chemistry B*, **2006**, 110, 21850-6	3.4	66
354	Hybrid energy harvester with simultaneous triboelectric and electromagnetic generation from an embedded floating oscillator in a single package. *Nano Energy*, **2016**, 23, 50-59	17.1	66
353	Direct Observation of a Carbon Filament in Water-Resistant Organic Memory. *ACS Nano*, **2015**, 9, 7306-13	16.7	65
352	Surface-modified microelectrode array with flake nanostructure for neural recording and stimulation. *Nanotechnology*, **2010**, 21, 85303	3.4	65
351	An Underlap Channel-Embedded Field-Effect Transistor for Biosensor Application in Watery and Dry Environment. *IEEE Nanotechnology Magazine*, **2012**, 11, 390-394	2.6	63
350	A well-ordered flower-like gold nanostructure for integrated sensors via surface-enhanced Raman scattering. *Nanotechnology*, **2009**, 20, 235302	3.4	62
349	Ferrocene Functionalized Single-Walled Carbon Nanotube Bundles. Hybrid Interdigitated Construction Film for l-Glutamate Detection. *Journal of Physical Chemistry C*, **2007**, 111, 1200-1206	3.8	59
348	Sublithographic nanofabrication technology for nanocatalysts and DNA chips. *Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena*, **2003**, 21, 2951		55
347	Comprehensive modeling of resistive switching in the Al/TiOx/TiO2/Al heterostructure based on space-charge-limited conduction. *Applied Physics Letters*, **2010**, 97, 033508	3.4	54
346	Surface structural analysis of a friction layer for a triboelectric nanogenerator. *Nano Energy*, **2017**, 42, 34-42	17.1	52
345	A Triboelectric Sponge Fabricated from a Cube Sugar Template by 3D Soft Lithography for Superhydrophobicity and Elasticity. *Advanced Electronic Materials*, **2016**, 2, 1500331	6.4	52
344	Nonvolatile Memory by All-Around-Gate Junctionless Transistor Composed of Silicon Nanowire on Bulk Substrate. *IEEE Electron Device Letters*, **2011**, 32, 602-604	4.4	52
343	CRP detection from serum for chip-based point-of-care testing system. *Biosensors and Bioelectronics*, **2013**, 41, 322-7	11.8	51
342	Design strategy for a piezoelectric nanogenerator with a well-ordered nanoshell array. *ACS Nano*, **2013**, 7, 10773-9	16.7	51
341	Palladium nanoparticle decorated silicon nanowire field-effect transistor with side-gates for hydrogen gas detection. *Applied Physics Letters*, **2014**, 104, 013508	3.4	51

340	Comprehensive Analysis of Gate-Induced Drain Leakage in Vertically Stacked Nanowire FETs: Inversion-Mode Versus Junctionless Mode. *IEEE Electron Device Letters*, **2016**, 37, 541-544	4.4	50
339	Development of a Point-of-Care Testing Platform With a Nanogap-Embedded Separated Double-Gate Field Effect Transistor Array and Its Readout System for Detection of Avian Influenza. *IEEE Sensors Journal*, **2011**, 11, 351-360	4	50
338	An underlap field-effect transistor for electrical detection of influenza. *Applied Physics Letters*, **2010**, 96, 033703	3.4	49
337	FinFET process refinements for improved mobility and gate work function engineering		49
336	Direct-laser-patterned friction layer for the output enhancement of a triboelectric nanogenerator. *Nano Energy*, **2017**, 35, 379-386	17.1	48
335	A Vertically Integrated Junctionless Nanowire Transistor. *Nano Letters*, **2016**, 16, 1840-7	11.5	48
334	3-Dimensional broadband energy harvester based on internal hydrodynamic oscillation with a package structure. *Nano Energy*, **2015**, 17, 82-90	17.1	47
333	Functional Circuitry on Commercial Fabric via Textile-Compatible Nanoscale Film Coating Process for Fibertronics. *Nano Letters*, **2017**, 17, 6443-6452	11.5	47
332	Effects of the oxygen vacancy concentration in InGaZnO-based resistance random access memory. *Applied Physics Letters*, **2012**, 101, 243503	3.4	47
331	Triboelectric nanogenerator based on rolling motion of beads for harvesting wind energy as active wind speed sensor. *Nano Energy*, **2018**, 52, 256-263	17.1	46
330	Spacer FinFET: nanoscale double-gate CMOS technology for the terabit era. *Solid-State Electronics*, **2002**, 46, 1595-1601	1.7	46
329	Self-powered electro-coagulation system driven by a wind energy harvesting triboelectric nanogenerator for decentralized water treatment. *Nano Energy*, **2016**, 28, 288-295	17.1	46
328	Vertically Integrated Multiple Nanowire Field Effect Transistor. *Nano Letters*, **2015**, 15, 8056-61	11.5	45
327	Label-free DNA detection with a nanogap embedded complementary metal oxide semiconductor. *Nanotechnology*, **2011**, 22, 135502	3.4	45
326	A Nonpiecewise Model for Long-Channel Junctionless Cylindrical Nanowire FETs. *IEEE Electron Device Letters*, **2012**, 33, 155-157	4.4	44
325	Self-powered wearable keyboard with fabric based triboelectric nanogenerator. *Nano Energy*, **2018**, 53, 596-603	17.1	44
324	. *IEEE Electron Device Letters*, **2013**, 34, 1479-1481	4.4	43
323	A New Sensing Metric to Reduce Data Fluctuations in a Nanogap-Embedded Field-Effect Transistor Biosensor. *IEEE Transactions on Electron Devices*, **2012**, 59, 2825-2831	2.9	43

322	Functionalized porous Si nanowires for selective and simultaneous electrochemical detection of Cd(II) and Pb(II) ions. *Electrochimica Acta*, **2016**, 211, 998-1005	6.7	43
321	Electrical biomolecule detection using nanopatterned silicon via block copolymer lithography. *Small*, **2014**, 10, 337-43	11	42
320	Gold nanoparticle embedded silicon nanowire biosensor for applications of label-free DNA detection. *Biosensors and Bioelectronics*, **2010**, 25, 2182-5	11.8	42
319	Self-Powered Ion Concentration Sensor with Triboelectricity from Liquid–Solid Contact Electrification. *Advanced Electronic Materials*, **2016**, 2, 1600006	6.4	42
318	Triboelectric nanogenerator with nanostructured metal surface using water-assisted oxidation. *Nano Energy*, **2016**, 21, 258-264	17.1	42
317	A Highly Responsive Silicon Nanowire/Amplifier MOSFET Hybrid Biosensor. *Scientific Reports*, **2015**, 5, 12286	4.9	41
316	Highly durable and flexible memory based on resistance switching. *Solid-State Electronics*, **2010**, 54, 392-396	1.7	41
315	Self-heated silicon nanowires for high performance hydrogen gas detection. *Nanotechnology*, **2015**, 26, 095501	3.4	40
314	Surface Engineering of Triboelectric Nanogenerator with an Electrodeposited Gold Nanoflower Structure. *Scientific Reports*, **2015**, 5, 13866	4.9	40
313	Universal Potential Model in Tied and Separated Double-Gate MOSFETs With Consideration of Symmetric and Asymmetric Structure. *IEEE Transactions on Electron Devices*, **2008**, 55, 1472-1479	2.9	40
312	Analytical Threshold Voltage Model for Double-Gate MOSFETs With Localized Charges. *IEEE Electron Device Letters*, **2008**, 29, 927-930	4.4	40
311	Hydrogen annealing effect on DC and low-frequency noise characteristics in CMOS FinFETs. *IEEE Electron Device Letters*, **2003**, 24, 186-188	4.4	40
310	Triboelectric Nanogenerator Based on the Internal Motion of Powder with a Package Structure Design. *ACS Nano*, **2016**, 10, 1017-24	16.7	39
309	Surface engineering for enhancement of sensitivity in an underlap-FET biosensor by control of wettability. *Biosensors and Bioelectronics*, **2013**, 41, 867-70	11.8	39
308	Sub 50-nm FinFET: PMOS		39
307	A prototype high sensitivity load cell using single walled carbon nanotube strain gauges. *Sensors and Actuators A: Physical*, **2012**, 180, 120-126	3.9	38
306	Piezoelectric nanogenerator with a nanoforest structure. *Nano Energy*, **2013**, 2, 1142-1148	17.1	37
305	A one-step route to a perfectly ordered wafer-scale microbowl array for size-dependent superhydrophobicity. *Small*, **2008**, 4, 211-6	11	37

304	Si-MoS Vertical Heterojunction for a Photodetector with High Responsivity and Low Noise Equivalent Power. *ACS Applied Materials & Interfaces*, **2019**, 11, 7626-7634	9.5	36
303	Analytical Threshold Voltage Model of Junctionless Double-Gate MOSFETs With Localized Charges. *IEEE Transactions on Electron Devices*, **2013**, 60, 2951-2955	2.9	36
302	A pH sensor with a double-gate silicon nanowire field-effect transistor. *Applied Physics Letters*, **2013**, 102, 083701	3.4	36
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299	Disk-based triboelectric nanogenerator operated by rotational force converted from linear force by a gear system. *Nano Energy*, **2018**, 50, 489-496	17.1	35
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297	Thermofluorescent Conjugated Polymer Sensors for Nano- and Microscale Temperature Monitoring. *Macromolecular Chemistry and Physics*, **2011**, 212, 1211-1220	2.6	32
296	Electrowetting on a polymer microlens array. *Langmuir*, **2010**, 26, 12443-7	4	32
295	Nanoscale ultrathin body PMOSFETs with raised selective germanium source/drain. *IEEE Electron Device Letters*, **2001**, 22, 447-448	4.4	32
294	Multiplex electrical detection of avian influenza and human immunodeficiency virus with an underlap-embedded silicon nanowire field-effect transistor. *Biosensors and Bioelectronics*, **2014**, 55, 162-7	11.8	30
293	Floating Oscillator-Embedded Triboelectric Generator for Versatile Mechanical Energy Harvesting. *Scientific Reports*, **2015**, 5, 16409	4.9	30
292	Analytical modeling and thermodynamic analysis of robust superhydrophobic surfaces with inverse-trapezoidal microstructures. *Langmuir*, **2010**, 26, 17389-97	4	30
291	Sublithographic vertical gold nanogap for label-free electrical detection of protein-ligand binding. *Journal of Vacuum Science & Technology B*, **2007**, 25, 443		30
290	A study of negative-bias temperature instability of SOI and body-tied FinFETs. *IEEE Electron Device Letters*, **2005**, 26, 326-328	4.4	30
289	Physically Transient Memory on a Rapidly Dissoluble Paper for Security Application. *Scientific Reports*, **2016**, 6, 38324	4.9	30
288	Microfabrication and characterization of spray-coated single-wall carbon nanotube film strain gauges. *Nanotechnology*, **2011**, 22, 455301	3.4	29
287	Patterning sub-30-nm MOSFET gate with i-line lithography. *IEEE Transactions on Electron Devices*, **2001**, 48, 1004-1006	2.9	29

286	Multilayer Graphene with a Rippled Structure as a Spacer for Improving Plasmonic Coupling. *Advanced Functional Materials*, **2016**, 26, 5093-5101	15.6	28
285	A 9-bit 80 MS/s Successive Approximation Register Analog-to-Digital Converter With a Capacitor Reduction Technique. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2010**, 57, 502-506	3.5	28
284	A conventional route to scalable morphology-controlled regular structures and their superhydrophobic/hydrophilic properties for biochips application. *Lab on A Chip*, **2009**, 9, 2140-4	7.2	28
283	Flammable carbon nanotube transistors on a nitrocellulose paper substrate for transient electronics. *Nano Research*, **2017**, 10, 87-96	10	26
282	Bio-inspired complementary photoconductor by porphyrin-coated silicon nanowires. *Advanced Materials*, **2011**, 23, 3979-83	24	26
281	Self-Curable Gate-All-Around MOSFETs Using Electrical Annealing to Repair Degradation Induced From Hot-Carrier Injection. *IEEE Transactions on Electron Devices*, **2016**, 63, 910-915	2.9	25
280	A biomolecular detection method based on charge pumping in a nanogap embedded field-effect-transistor biosensor. *Applied Physics Letters*, **2009**, 94, 243903	3.4	25
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278	Morphology-controlled SWCNT/polymeric microsphere arrays by a wet chemical self-assembly technique and their application for sensors. *Nanotechnology*, **2006**, 17, 2988-2993	3.4	24
277	Logic circuits composed of flexible carbon nanotube thin-film transistor and ultra-thin polymer gate dielectric. *Scientific Reports*, **2016**, 6, 26121	4.9	24
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275	Substrate surface roughness-dependent 3-D complex nanoarchitectures of gold particles from directed electrodeposition. *Journal of Materials Chemistry*, **2009**, 19, 478-483		23
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272	Investigation of Physically Unclonable Functions Using Flash Memory for Integrated Circuit Authentication. *IEEE Nanotechnology Magazine*, **2015**, 14, 384-389	2.6	22
271	A Superamphiphobic Sponge with Mechanical Durability and a Self-Cleaning Effect. *Scientific Reports*, **2016**, 6, 29993	4.9	22
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269	Bistable resistor (biristor) - gateless silicon nanowire memory **2010**,		22

268	Electrochemical behavior of needle-like and forest-like single-walled carbon nanotube electrodes. *Journal of Electroanalytical Chemistry*, **2006**, 594, 27-34	4.1	22
267	Mimicry of Excitatory and Inhibitory Artificial Neuron With Leaky Integrate-and-Fire Function by a Single MOSFET. *IEEE Electron Device Letters*, **2020**, 41, 208-211	4.4	22
266	A Recoverable Synapse Device Using a Three-Dimensional Silicon Transistor. *Advanced Functional Materials*, **2018**, 28, 1804844	15.6	22
265	Investigation of Self-Heating Effects in Gate-All-Around MOSFETs With Vertically Stacked Multiple Silicon Nanowire Channels. *IEEE Transactions on Electron Devices*, **2017**, 64, 4393-4399	2.9	21
264	Investigation of Size Dependence on Sensitivity for Nanowire FET Biosensors. *IEEE Nanotechnology Magazine*, **2011**, 10, 1405-1411	2.6	21
263	Designed Workfunction Engineering of Double-Stacked Metal Nanocrystals for Nonvolatile Memory Application. *IEEE Transactions on Electron Devices*, **2009**, 56, 377-382	2.9	21
262	Single nanowire on graphene (SNOG) as an efficient, reproducible, and stable SERS-active platform. *Nanoscale*, **2016**, 8, 8878-86	7.7	21
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260	A Bandgap-Engineered Silicon-Germanium Biristor for Low-Voltage Operation. *IEEE Transactions on Electron Devices*, **2014**, 61, 2-7	2.9	19
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258	A Bulk FinFET Unified-RAM (URAM) Cell for Multifunctioning NVM and Capacitorless 1T-DRAM. *IEEE Electron Device Letters*, **2008**, 29, 632-634	4.4	19
257	Body Thickness Dependence of Impact Ionization in a Multiple-Gate FinFET. *IEEE Electron Device Letters*, **2007**, 28, 625-627	4.4	19
256	Bioinspired Photoresponsive Single Transistor Neuron for a Neuromorphic Visual System. *Nano Letters*, **2020**, 20, 8781-8788	11.5	19
255	All 3D-Printed Flexible ZnO UV Photodetector on an Ultraflat Substrate. *ACS Sensors*, **2020**, 5, 1028-1032	9.2	18
254	Low-Temperature Fabrication of Robust, Transparent, and Flexible Thin-Film Transistors with a Nanolaminated Insulator. *ACS Applied Materials & Interfaces*, **2018**, 10, 15829-15840	9.5	18
253	Nano-electromechanical Switch Based on a Physical Unclonable Function for Highly Robust and Stable Performance in Harsh Environments. *ACS Nano*, **2017**, 11, 12547-12552	16.7	18
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247	Oscillating behaviour of hazardous gas on tin oxide gas sensor: Fourier and wavelet transform analysis. *Sensors and Actuators B: Chemical*, **2006**, 115, 357-364	8.5	18
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245	Nanoscale FET-Based Transduction toward Sensitive Extended-Gate Biosensors. *ACS Sensors*, **2019**, 4, 1724-1729	9.2	17
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241	High-performance thin-film transistors produced from highly separated solution-processed carbon nanotubes. *Applied Physics Letters*, **2014**, 104, 143508	3.4	17
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238	A Unified-RAM (URAM) Cell for Multi-Functioning Capacitorless DRAM and NVM **2007**,		17
237	Large-sized sandpaper coated with solution-processed aluminum for a triboelectric nanogenerator with reliable durability. *RSC Advances*, **2017**, 7, 137-144	3.7	16
236	A Novel Technique for Curing Hot-Carrier-Induced Damage by Utilizing the Forward Current of the PN-Junction in a MOSFET. *IEEE Electron Device Letters*, **2017**, 38, 1012-1014	4.4	16
235	Self-aligned nanoforest in silicon nanowire for sensitive conductance modulation. *Nano Letters*, **2012**, 12, 5603-8	11.5	16
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233	Controlled Molecularly Mediated Assembly of Gold Nanooctahedra for a Glucose Biosensor. *Journal of Physical Chemistry C*, **2008**, 112, 3605-3611	3.8	16

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231	Investigation of Low-Frequency Noise in Nonvolatile Memory Composed of a Gate- All-Around Junctionless Nanowire FET. *IEEE Transactions on Electron Devices*, **2016**, 63, 2210-2213	2.9	16
230	Local Electro-Thermal Annealing for Repair of Total Ionizing Dose-Induced Damage in Gate-All-Around MOSFETs. *IEEE Electron Device Letters*, **2016**, 37, 843-846	4.4	15
229	Ferromagnetic nanoparticle-embedded hybrid nanogenerator for harvesting omnidirectional vibration energy. *Nanoscale*, **2018**, 10, 12276-12283	7.7	15
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225	A color display system based on thermochromic conjugated polydiacetylene supramolecules. *Macromolecular Research*, **2010**, 18, 404-407	1.9	15
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