

ESI 材料科学学科研究前沿排名 TOP20 (2017-7)

序号	研究前沿	论文数	被引频次	篇均被引频次	平均年
1	STRAINED MONOLAYER MOS2; MONOLAYER MOS2; MONOLAYER TRANSITION METAL DICHALCOGENIDE SEMICONDUCTOR; MONOLAYER TRANSITION METAL DICHALCOGENIDES; MONOLAYER WSE2	36	10,071	279.75	2013.6
2	SODIUM-ION ENERGY STORAGE BATTERIES; SODIUM ION BATTERIES; RECHARGEABLE SODIUM-ION BATTERIES; HIGH PERFORMANCE SODIUM ION BATTERY ANODES; ROOM-TEMPERATURE STATIONARY SODIUM-ION BATTERIES	28	9,276	331.29	2013.1
3	SELF-SUSTAINED TOPOLOGICAL MAJORANA PHASE; REALIZING MAJORANA FERMIONS; MAJORANA FERMIONS; MAJORANA NANOWIRE; MAJORANA QUANTUM WIRES	31	7,725	249.19	2012.9
4	CHIRAL MAGNETIC DOMAIN WALL STRUCTURE; GIANT SPIN HALL EFFECT; SPIN HALL EFFECT; MAGNETIC DOMAIN WALLS; CHIRAL SPIN TORQUE	44	7,240	164.55	2013.3
5	SILICENE FIELD-EFFECT TRANSISTORS OPERATING; CORRUGATED SILICENE PHASES; BUCKLED SILICENE FORMATION; SILICENE LAYERS; EPITAXIAL SILICENE	25	6,882	275.28	2012.7

6	HIGHLY EFFICIENT ORGANIC DYE-SENSITIZED SOLAR CELLS; HIGH-CONVERSION-EFFICIENCY ORGANIC DYE-SENSITIZED SOLAR CELLS; HIGHLY EFFICIENT DYE-SENSITIZED SOLAR CELLS; EFFICIENT DYE-SENSITIZED SOLAR CELLS; HIGH-EFFICIENCY CO(II/III)-BASED DYE-SENSITIZED SOLAR CELLS	33	6,505	197.12	2013.9
7	FEW-LAYER BLACK PHOSPHORUS FIELD-EFFECT TRANSISTORS; FEW-LAYER BLACK PHOSPHORUS; BLACK PHOSPHORUS FIELD-EFFECT TRANSISTORS; REDISCOVERING BLACK PHOSPHORUS; ULTRATHIN BLACK PHOSPHORUS	14	6,386	456.14	2014
8	HIGH-PERFORMANCE SOLUTION-PROCESSED ORGANIC SOLAR CELLS; SOLUTION-PROCESSED ORGANIC SOLAR CELLS BASED; SOLUTION-PROCESSED HIGH-EFFICIENCY ORGANIC SOLAR CELLS; SOLUTION-PROCESSED ORGANIC SOLAR CELLS; SOLUTION PROCESSABLE RHODANINE-BASED SMALL MOLECULE ORGANIC PHOTOVOLTAIC CELLS	15	6,087	405.8	2013.1
9	ULTRA-THIN PLASMONIC OPTICAL VORTEX PLATE BASED; PLASMONIC GRADIENT METASURFACES; DIELECTRIC GRADIENT METASURFACE OPTICAL ELEMENTS; PLASMONIC METASURFACES; ANISOTROPIC OPTICAL ANTENNA METASURFACES	31	5,610	180.97	2013.5

10	EFFICIENT 3D HYDROGEN EVOLUTION CATHODE; EFFICIENT HYDROGEN EVOLUTION CATHODE; COST-EFFECTIVE 3D HYDROGEN EVOLUTION CATHODE; ELECTROCHEMICAL HYDROGEN EVOLUTION REACTION; HYDROGEN EVOLUTION REACTION	26	5,363	206.27	2013.7
11	HIGHLY EFFICIENT NEAR-INFRARED DELAYED FLUORESCENCE ORGANIC LIGHT EMITTING DIODES; EFFICIENT BLUE ORGANIC LIGHT-EMITTING DIODES EMPLOYING THERMALLY; DELAYED FLUORESCENT ORGANIC LIGHT-EMITTING DIODES; DELAYED FLUORESCENCE DIODES; FULL-COLOR DELAYED FLUORESCENCE MATERIALS BASED	46	5,223	113.54	2014.6
12	HIGH EFFICIENCY ELECTRODEPOSITED CU ₂ ZNSNS ₄ SOLAR CELL; ZN-RICH CU ₂ ZNSNS ₄ SOLAR CELLS; CU ₂ ZNSNSE ₄ THIN FILM SOLAR CELLS; KESTERITE THIN-FILM SOLAR CELLS; CU ₂ ZNSNS ₄ SOLAR CELLS	29	5,193	179.07	2013.2
13	ROBUST SILICON NANOPARTICLE-BASED LITHIUM ION BATTERY ANODES; DOUBLE-WALLED SILICON NANOTUBE BATTERY ANODES; CRYSTALLINE SILICON NANOPARTICLE LITHIATION; LARGE-VOLUME-CHANGE LITHIUM BATTERY ANODES; LITHIUM ION BATTERY ANODE	16	5,176	323.5	2012.3

14	TWO-DIMENSIONAL LAYERED TRANSITION METAL DICHALCOGENIDE NANOSHEETS; TWO-DIMENSIONAL TRANSITION METAL DICHALCOGENIDES; CHEMISTRY; ELECTRONICS; OPTOELECTRONICS	2	5,071	2535.5	2012.5
15	EFFICIENT SOLAR WATER SPLITTING; COPPER(I) OXIDE WATER SPLITTING PHOTOCATHODES; HIGHLY EFFICIENT WATER SPLITTING; SOLAR WATER SPLITTING; PHOTOELECTROCHEMICAL WATER SPLITTING	33	4,926	149.27	2013.7
16	CHEMICALLY EXFOLIATED METALLIC MOS ₂ NANOSHEETS; VERTICALLY ALIGNED MOS ₂ NANOFILMS; DEFECT-RICH MOS ₂ ULTRATHIN NANOSHEETS; OXYGEN-INCORPORATED MOS ₂ ULTRATHIN NANOSHEETS; HYDROGEN EVOLUTION REACTION	9	4,671	519	2012.9
17	ULTRATHIN POROUS NiO ₂ O ₄ NANOSHEET ARRAYS; HIERARCHICAL NiO ₂ O ₄ NANOSHEETS@HOLLOW MICROROD ARRAYS; HIERARCHICAL POROUS NiO ₂ O ₄ NANOWIRES; HIGH-PERFORMANCE FLEXIBLE ALL-SOLID-STATE SUPERCAPACITORS; HIGH-PERFORMANCE ASYMMETRIC SUPERCAPACITORS	24	4,575	190.62	2013
18	FREESTANDING ULTRATHIN REDUCED GRAPHENE OXIDE MEMBRANES; MOLECULAR-SIEVING GRAPHENE OXIDE MEMBRANES; GRAPHENE OXIDE MEMBRANES BASED; NANOSTRAND-CHANNELLED GRAPHENE OXIDE MEMBRANES; GRAPHENE OXIDE MEMBRANES	30	4,453	148.43	2014

19	HIGH-POWER GRAPHENE MICRO-SUPERCAPACITORS; 3-DIMENSIONAL GRAPHENE CARBON NANOTUBE CARPET-BASED MICROSUPERCAPACITORS; ALL-SOLID-STATE FLEXIBLE ULTRATHIN MICRO-SUPERCAPACITORS BASED; LASER-INDUCED POROUS GRAPHENE FILMS; ULTRAHIGH VOLUMETRIC PERFORMANCE SUPERCAPACITORS	21	4,269	203.29	2013.9
20	SEMICONDUCTOR QUANTUM DOT HYBRID QUBIT; ROOM-TEMPERATURE QUANTUM BIT MEMORY EXCEEDING ONE SECOND; ROOM-TEMPERATURE QUANTUM BIT STORAGE EXCEEDING 39 MINUTES; ADDRESSABLE QUANTUM DOT QUBIT; DISTANT SOLID-STATE QUANTUM BITS	29	4,213	145.28	2012.9