

ESI 材料科学学科研究前沿排名 TOP20 (2018-5)

序号	研究前沿	论文数	被引频次	篇均被引频次	平均年
1	EFFICIENT PLANAR HETEROJUNCTION PEROVSKITE SOLAR CELLS;HIGHLY EFFICIENT LEAD IODIDE PEROVSKITE THIN-FILM SOLAR CELLS;EFFICIENT ORGANOMETAL TRIHALIDE PEROVSKITE PLANAR-HETEROJUNCTION SOLAR CELLS;SOLUTION-PROCESSED PLANAR HETEROJUNCTION PEROVSKITE SOLAR CELLS; HIGH-PERFORMANCE INORGANIC-ORGANIC HYBRID PEROVSKITE SOLAR CELLS	41	42,858	1045.32	2013.9
2	STABLE THREE-DIMENSIONAL TOPOLOGICAL DIRAC SEMIMETAL CD3AS2;TOPOLOGICAL WEYL SEMIMETAL CANDIDATE NBP;TOPOLOGICAL WEYL SEMIMETAL STATE; THREE-DIMENSIONAL TOPOLOGICAL DIRAC SEMIMETAL PHASE;CANDIDATE TYPE-II WEYL SEMIMETAL MOTE2	35	9,830	280.86	2014.9
3	FEW-LAYER BLACK PHOSPHORUS FIELD-EFFECT TRANSISTORS;FEW-LAYER BLACK PHOSPHORUS;BLACK PHOSPHORUS FIELD-EFFECT TRANSISTORS;REDISCOVERING BLACK PHOSPHORUS;ULTRATHIN BLACK PHOSPHORUS	13	9,304	715.69	2014

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4	CARBON DOTS (GRAPHENE QUANTUM DOTS;BRIGHT MULTICOLOR BANDGAP FLUORESCENT CARBON QUANTUM DOTS;HIGHLY LUMINESCENT NITROGEN-DOPED AMPHOTERIC CARBON DOTS;HIGHLY LUMINESCENT CARBON DOTS;HIGHLY PHOTOLUMINESCENT CARBON DOTS	46	8,713	189.41	2014.7
5	FLUORENE-FREE ORGANOMETAL HALIDE PEROVSKITE LIGHT-EMITTING DIODES;FULLY PRINTED HALIDE PEROVSKITE LIGHT-EMITTING DIODES;EFFICIENT VISIBLE QUASI-2D PEROVSKITE LIGHT-EMITTING DIODES; MULTICOLORED ORGANIC/INORGANIC HYBRID PEROVSKITE LIGHT-EMITTING DIODES; HIGH-PERFORMANCE PEROVSKITE LIGHT-EMITTING DIODES	31	6,929	223.52	2015
6	FREESTANDING ULTRATHIN REDUCED GRAPHENE OXIDE MEMBRANES;GRAPHENE OXIDE MEMBRANES BASED;NANOSTRAND-CHANNELLED GRAPHENE OXIDE MEMBRANES;MOLECULAR-SIEVING GRAPHENE OXIDE MEMBRANES;GRAPHENE OXIDE MEMBRANES	48	6,822	142.12	2014.4

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7	HIGHLY EFFICIENT ORGANIC DYE-SENSITIZED SOLAR CELLS;HIGHLY EFFICIENT DYE-SENSITIZED SOLAR CELLS;HIGH-EFFICIENCY CO(II/III)-BASED DYE-SENSITIZED SOLAR CELLS;HIGH-PERFORMANCE DYE-SENSITIZED SOLAR CELLS;STABLE DYE-SENSITIZED SOLAR CELLS	21	6,587	313.67	2014.2
8	TETRAPHENYLETHYLENE CORE-BASED 3D STRUCTURE SMALL MOLECULAR ACCEPTOR ENABLING EFFICIENT NON-FULLERENE ORGANIC SOLAR CELLS; HIGH-PERFORMANCE SOLUTION-PROCESSED NON-FULLERENE ORGANIC SOLAR CELLS BASED;HIGHLY EFFICIENT SOLUTION-PROCESSED NON-FULLERENE ORGANIC SOLAR CELLS;HIGH-PERFORMANCE NON-FULLERENE BASED ORGANIC SOLAR CELLS;3D INTERLOCKING GEOMETRY ENABLING EFFICIENT ORGANIC SOLAR CELLS	39	6,261	160.54	2014.9
9	BUILT-IN AGGREGATION-INDUCED EMISSION LIGHT-UP APOPTOSIS SENSOR;AGGREGATION-INDUCED EMISSION MATERIALS;AGGREGATION-INDUCED EMISSION CHARACTERISTICS;BIOCOMPATIBLE AIE-ACTIVE FLUORESCENT ORGANIC NANOPARTICLES; AGGREGATION-INDUCED EMISSION MATERIAL	33	6,051	183.36	2014.9

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10	CARBON NANOTUBE FIBER BASED STRETCHABLE WIRE-SHAPED SUPERCAPACITORS;STRETCHABLE WIRE-SHAPED ASYMMETRIC SUPERCAPACITORS BASED;WEAVABLE COILED CARBON NANOTUBE/MNO2/POLYMER FIBER SOLID-STATE SUPERCAPACITORS;SOLID-STATE HIGH PERFORMANCE FLEXIBLE SUPERCAPACITORS BASED;HIGHLY STRETCHABLE SUPERCAPACITOR BASED	37	6,020	162.7	2013.9
11	DIELECTRIC GRADIENT METASURFACE OPTICAL ELEMENTS;LOW-CONTRAST DIELECTRIC METASURFACE OPTICS;HIGH-TRANSMISSION DIELECTRIC METASURFACE; DIELECTRIC METASURFACES;HELICITY MULTIPLEXED BROADBAND METASURFACE HOLOGRAMS	24	5,475	228.12	2014.6
12	LI-O-2 BATTERIES BASED;NON-AQUEOUS LI-O-2 BATTERIES; ADVANCED LI-O-2 BATTERIES;AQUEOUS LI-O-2 BATTERIES; RECHARGEABLE LI-O-2 BATTERIES	28	5,417	193.46	2014.2
13	MONOLAYER TRANSITION METAL DICHALCOGENIDE SEMICONDUCTOR;MONOLAYER MOS2;MONOLAYER TRANSITION METAL DICHALCOGENIDES;MONOLAYER WSE2;MONOLAYER SEMICONDUCTOR	17	5,253	309	2013.7

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14	CHEMICALLY EXFOLIATED METALLIC MOS2 NANOSHEETS; DEFECT-RICH MOS2 ULTRATHIN NANOSHEETS; OXYGEN-INCORPORATED MOS2 ULTRATHIN NANOSHEETS; HYDROGEN EVOLUTION REACTION;CONDUCTING MOS2 NANOSHEETS	7	5,050	721.43	2013
15	HYBRID LEAD IODIDE PEROVSKITE SOLAR CELLS;LATERAL STRUCTURE HYBRID PEROVSKITE SOLAR CELLS;LEAD HALIDE PEROVSKITE SOLAR CELLS;CH3NH3PBI3 PEROVSKITE SOLAR CELLS;CH3NH3PBX3 PEROVSKITE SOLAR CELLS	16	4,841	302.56	2015
16	DYE-SENSITIZED CORE/ACTIVE SHELL UPCONVERSION NANOPARTICLES;808 NM DRIVEN ND3+-SENSITIZED UPCONVERSION NANOSTRUCTURES;800 NM EXCITED UPCONVERSION LUMINESCENCE;TRI-DOPED UPCONVERSION COLLOIDAL NANOPARTICLES; UPCONVERSION NANOPARTICLES	32	4,678	146.19	2014.6
17	COST-EFFECTIVE 3D HYDROGEN EVOLUTION CATHODE; HYDROGEN EVOLUTION REACTION;ELECTROCATALYTIC HYDROGEN EVOLUTION;ELECTROCHEMICAL HYDROGEN EVOLUTION;HYDROGEN EVOLUTION	14	4,673	333.79	2013.9

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18	EQUIATOMIC HIGH-ENTROPY ALLOY CRMNFECONI; SINGLE-PHASE HIGH-ENTROPY ALLOY CRMNFECONI; NANOCRYSTALLINE COCRFEMNNI HIGH-ENTROPY ALLOY; CRMNFECONI HIGH-ENTROPY ALLOY;COCRFEMNNI HIGH-ENTROPY ALLOY	39	4,671	119.77	2014.9
19	TRANSPARENT CONDUCTIVE TWO-DIMENSIONAL TITANIUM CARBIDE EPITAXIAL THIN FILMS; TWO-DIMENSIONAL TRANSITION METAL CARBIDES; CONDUCTIVE TWO-DIMENSIONAL TITANIUM CARBIDE CLAY;TWO-DIMENSIONAL TRANSITION-METAL CARBIDES; TWO-DIMENSIONAL TITANIUM CARBIDE	25	4,577	183.08	2014.5
20	ROOM-TEMPERATURE STATIONARY SODIUM-ION BATTERIES;SODIUM-ION BATTERIES;LARGE-SCALE ELECTRIC ENERGY STORAGE;ELECTROCHEMICAL ENERGY STORAGE;SODIUM ION BATTERIES	5	4,478	895.6	2013.6