ESI 材料科学学科研究前沿排名 TOP20(2019-1)

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;SOLUTION-PROCESSED PLANAR HETEROJUNCTION PEROVSKITE SOLAR CELLS;HIGH-PERFORMANCE INORGANIC-ORGANIC HYBRID PEROVSKITE SOLAR CELLS;PLANAR HETEROJUNCTION PEROVSKITE SOLAR CELLS;HIGHLY EFFICIENT PEROVSKITE SOLAR CELLS	34	**46,524**	1368.35	2013.9
2	HYDROGEN EVOLUTION REACTION CATALYTIC ACTIVITY;EFFICIENT HYDROGEN EVOLUTION REACTION;ELECTROCATALYTIC HYDROGEN EVOLUTION REACTION;ELECTROCHEMICAL HYDROGEN EVOLUTION REACTION;HIGH-PERFORMANCE HYDROGEN EVOLUTION REACTION	45	**14,447**	321.04	2014.3
3	CANDIDATE TYPE-II WEYL SEMIMETAL MOTE2;TOPOLOGICAL WEYL SEMIMETAL CANDIDATE NBP;TYPE-II WEYL SEMIMETAL CANDIDATE WTE2;CANDIDATE TYPE-II WEYL SEMIMETAL WTE2;TOPOLOGICAL WEYL SEMIMETAL STATE	40	**13,024**	325.6	2015

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4	FLUORENE-FREE ORGANOMETAL HALIDE PEROVSKITE LIGHT-EMITTING DIODES;FULLY PRINTED HALIDE PEROVSKITE LIGHT-EMITTING DIODES;MULTICOLORED ORGANIC/INORGANIC HYBRID PEROVSKITE LIGHT-EMITTING DIODES;EFFICIENT VISIBLE QUASI-2D PEROVSKITE LIGHT-EMITTING DIODES;HIGH-PERFORMANCE PEROVSKITE LIGHT-EMITTING DIODES	34	**10,653**	313.32	2015.1
5	CARBON DOTS (GRAPHENE QUANTUM DOTS;53% EFFICIENT RED EMISSIVE CARBON QUANTUM DOTS;BRIGHT MULTICOLOR BANDGAP FLUORESCENT CARBON QUANTUM DOTS;COLOR-TUNABLE CARBON DOTS POSSESSING SOLID-STATE EMISSION;HIGHLY LUMINESCENT NITROGEN-DOPED AMPHOTERIC CARBON DOTS	45	**10,423**	231.62	2015.2
6	FEW-LAYER BLACK PHOSPHORUS FIELD-EFFECT TRANSISTORS;BLACK PHOSPHORUS FIELD-EFFECT TRANSISTORS;FEW-LAYER BLACK PHOSPHORUS;REDISCOVERING BLACK PHOSPHORUS;ULTRATHIN BLACK PHOSPHORUS	9	**10,310**	1145.56	2014

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7	ALL-INORGANIC CESIUM LEAD HALIDE PEROVSKITE NANOCRYSTALS;HIGHLY LUMINESCENT ALKYLAMMONIUM LEAD HALIDE PEROVSKITE NANOCRYSTALS;HIGHLY LUMINESCENT LEAD HALIDE PEROVSKITE NANOCRYSTALS;SHAPE-CONTROLLED CESIUM LEAD HALIDE PEROVSKITE NANOCRYSTALS;CESIUM LEAD HALIDE PEROVSKITE NANOCRYSTALS	42	**9,989**	237.83	2015.5
8	DIELECTRIC GRADIENT METASURFACE OPTICAL ELEMENTS;BROADBAND ACHROMATIC OPTICAL METASURFACE DEVICES;LOW-CONTRAST DIELECTRIC METASURFACE OPTICS;HELICITY MULTIPLEXED BROADBAND METASURFACE HOLOGRAMS;HIGH-TRANSMISSION DIELECTRIC METASURFACE	44	**9,401**	213.66	2015.2
9	GRAPHENE OXIDE MODIFIED POLYAMIDE THIN FILM COMPOSITE MEMBRANES;GRAPHENE OXIDE MODIFIED POLYAMIDE NANOFILTRATION MEMBRANE;NANOMETRIC GRAPHENE OXIDE FRAMEWORK MEMBRANES;MOLECULAR-SIEVING GRAPHENE OXIDE MEMBRANES;NANOSTRAND-CHANNELLED GRAPHENE OXIDE MEMBRANES	50	**9,093**	181.86	2014.5

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10	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	**7,680**	365.71	2014.2
11	HUMAN SKIN BASED TRIBOELECTRIC NANOGENERATORS;LAWN STRUCTURED TRIBOELECTRIC NANOGENERATORS;SEGMENTALLY STRUCTURED DISK TRIBOELECTRIC NANOGENERATOR;SINGLE-ELECTRODE-BASED SLIDING TRIBOELECTRIC NANOGENERATOR;SELF-POWERED TRIBOELECTRIC NANOSENSOR	41	**7,048**	171.9	2014.4
12	MONOLAYER TRANSITION METAL DICHALCOGENIDE SEMICONDUCTOR;MONOLAYER TRANSITION METAL DICHALCOGENIDES;MONOLAYER MOS2;MONOLAYER WSE2;MONOLAYER WS2	21	**6,790**	323.33	2013.9
13	EQUIATOMIC HIGH-ENTROPY ALLOY CRMNFECONI;SINGLE-PHASE HIGH-ENTROPY ALLOY CRMNFECONI;CRMNFECONI HIGH-ENTROPY ALLOY;HIGH-ENTROPY ALLOY CRMNFECONI;SINGLE-PHASE HIGH-ENTROPY ALLOY COMPOSITIONS	37	**6,580**	177.84	2015

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14	STABLE LITHIUM METAL ANODES;STABLE LITHIUM METAL BATTERIES;DENDRITE-FREE LITHIUM METAL ANODE;STABLE LITHIUM METAL STRIPPING-PLATING;LONG-LIFE LITHIUM METAL ANODES	40	**6,346**	158.65	2016
15	TRANSPARENT CONDUCTIVE TWO-DIMENSIONAL TITANIUM CARBIDE EPITAXIAL THIN FILMS;POROUS TWO-DIMENSIONAL TRANSITION METAL CARBIDE (MXENE) FLAKES;CONDUCTIVE TWO-DIMENSIONAL TITANIUM CARBIDE CLAY;TWO-DIMENSIONAL TRANSITION METAL CARBIDES;TWO-DIMENSIONAL TITANIUM CARBIDE	24	**6,099**	254.12	2014.6
16	TWO-DIMENSIONAL LAYERED TRANSITION METAL DICHALCOGENIDE NANOSHEETS;TWO-DIMENSIONAL TRANSITION METAL DICHALCOGENIDE NANOSHEET-BASED COMPOSITES;METAL DICHALCOGENIDE NANOSHEETS;ULTRATHIN TWO-DIMENSIONAL NANOMATERIALS;TWO-DIMENSIONAL NANOMATERIALS	6	**6,076**	1012.67	2014
17	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	15	**5,926**	395.07	2014.9

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18	REFINED NONLOCAL SHEAR DEFORMATION THEORY BEAM THEORY;FUNCTIONALLY GRADED TRIGONOMETRIC SHEAR DEFORMABLE NANOBEAMS INCLUDING NEUTRAL SURFACE POSITION CONCEPT;NEW SIMPLE THREE-UNKNOWN SINUSOIDAL SHEAR DEFORMATION THEORY;FOUR VARIABLE REFINED NTH-ORDER SHEAR DEFORMATION THEORY;NEW SIMPLE THREE-UNKNOWN SHEAR DEFORMATION THEORY	39	**5,898**	151.23	2015.4
19	LEAD-FREE SOLID-STATE ORGANIC-INORGANIC HALIDE PEROVSKITE SOLAR CELLS;LEAD-FREE INVERTED PLANAR FORMAMIDINIUM TIN TRIIODIDE PEROVSKITE SOLAR CELLS ACHIEVING POWER CONVERSION EFFICIENCIES;LEAD-FREE HALIDE PEROVSKITE SOLAR CELLS;LEAD-FREE CH3NH3SNI3 PEROVSKITE SOLAR CELLS;LEAD-FREE PEROVSKITE SOLAR CELLS	38	**5,771**	151.87	2015.8
20	CYCLING LI-O-2 BATTERIES;AQUEOUS LI-O-2 BATTERIES;ADVANCED LI-O-2 BATTERIES;NON-AQUEOUS LI-O-2 BATTERIES;RECHARGEABLE LI-O-2 BATTERIES	23	**5,754**	250.17	2014.3