

批准立项年份	2009
通过验收年份	2012

国家级实验教学示范中心年度报告

(2021年1月1日—2021年12月31日)

示范中心名称：~~能源系统与动力工程实验教学中心~~

示范中心主任：~~何建军~~

示范中心联系人及联系电话：~~晏忠钠/13975127209~~

所在学校名称：~~长沙理工大学~~

所在学校联系人及联系电话：~~熊丹/18942565828~~

2022年3月23日填报

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1	2021			https://www.csust.edu.cn/ndxy/info/1056/8721.htm
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4			1986					2021-1-1 2021-12-31
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6			1984					2021-1-1 2021-12-31
7			1967					2021-1-1 2021-12-31

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1		2017	194	5910
2		2018	224	4480
3		2019	202	2020
4		2020	218	3270
5		2021	220	3300
6		2017	54	1620
7		2018	58	1160
8		2019	81	810
9		2020	70	1050
10		2021	70	

12		2018	117	2340
13		2019	132	1320
14		2020	140	1820
15		2021	152	2280
16		2017	83	2490
17		2018	83	1660
18		2019	72	720
19		2020	105	1365
20		2021	136	2040

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2		ZL202010137124. X				
3	3D	ZL201911414045. 2				
4	SCR	201810230055. X				
5		ZL201911396348. 6				
6		ZL20181157380. 1				
7		ZL201911185139. 7		;		

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8		ZL201910182242. X				
9	PVD	ZL202011533197. 7				
10		ZL201910758385. 0				
11		ZL201910758338. 6				
12		ZL202010790289. 7				
13		ZL202110964515. 3				
14		202111258751. X				
15		ZL202011536999. 3				
16		ZL202011537000. 7				

17		ZL201911421436. 7				
18		ZL201911421432. 9				
19		ZL2020116165620				
20		ZL2020116202121				
21		ZL201910728698. 1				
22	Computer room heat-pipe air conditioni ng system with emergency cooling function and control method	US11089719132				
23	SNCR	202022910350. 5				

24		ZL202021926351. 2				
25		ZL202022103330. 7				
26		ZL202021332919. 8				
27		ZL202022746331. 3				
28	CORROSION FATIGUE RESISTANCE TEST DEVICE BASED ON ACOUSTIC EMISSION	ZL2021103863				
29		ZL202022746747. 5		;		

	V1.0					
38	V1.0	ZL2021SR0237934				
39	V1.0	ZL2021SR0060939		()		
40	V1.0	ZL2021SR0250072				
41	V1.0	ZL2021SR0249906				
42		ZL2021SR0860184				
43	Multistage heat treatment process for improving fatigue properties of titanium alloy	ZL2020103462				
44	Surface Zirconizing Method	2021102393				

	for Improving Surface Hardness and Wear Resistance of Titanium Alloy					
45	processing method for improving high-tempe rature creep performanc e of magnesium alloy by rolling and pre-compre ssion	2021103764				
46	A Method for Obtaining Ultra-fine Needle-lik -phase for Laser 3D Printing of Dual-phase Titanium Alloy	LU102283				

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2	VMD			2021, 4 1 (02) : 121-12 8		
3	NO _x			2021, 4 2 (10) : 317-32 3		
4	V-W/Ti S03			2021, 4 1 (07) : 3161-3 168		
5	N2 CO2 - NO			2021, 4 1 (11) : 933-94 1		
0	/			2021, 7 2 (02) : 1132-1 141		
1	- -			2021, 045 (02 2) : 9-1 8	CSCD	
2				2021, 4 1 (09) : 3803-3 814		
3				2021, 4 4 (01) :		

				43-50		
10	SiC			2021, 4 2 (01) : 34-43		
11	mcODM-STA			2021, 4 8 (06) : 119-12 5. DOI : 10.16		
12				2021, 4 2 (05) : 481-49 1		
13	Effect of Nozzle Geometry on Centerline Gas Holdup in Submerged Gas Injection		METALLURGICAL AND MATERIALS TRANSACTIONS B-PROCESS METALLURGY AND MATERIALS PROCESSING SCIENCE	2021, 52: 4002-4 011	SCI (E)	
52	The pollutant discharge improvement by introducing HHO gas into biomass boiler		Internationa l journal of hydrogen energy	2021, 46(45) : 23292- 23300	SCI (E)	
59	Performance analysis of a hybrid non-centralized radiant floor cooling system in hot and humid regions		Case studies in thermal engineering	2021, 28: 101645	SCI (E)	
50	Effect of ceiling height on flame spread over horizontal		Case Studies in Thermal Engineering	2021, 28: 101576	SCI (E)	

22	ATF ASAD			2021, 4 5 (10) : 144-15 0		
07	ATF EEMD			2021, 4 1 (05) : 91-97		
02	Kinetic analysis of diffusion combustion of low calorific value gas under the action of thermal dynamics		FUEL	2021, 287: 119435	SCI (E)	
09	Integrated valorization of spent coffee grounds for co-production of biodiesel and activated carbon: an energy and techno-economic case assessment in China		Journal of cleaner production	2021, 324: 129187	SCI (E)	
00	Kinetics study on the CO2 gasification of biochar derived from Miscanthus at different processing conditions		Energy	2021, 217: 119341	SCI (E)	
01	CO2 adsorption on giganteus (MG) chars prepared in different atmospheres		Journal of CO2 Utilization	2021, 52: 101670	SCI (E)	
02				2021, 6 3 (04) : 241-24		

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03	Study on the Pyrolysis Characteristics, Kinetics and Mineral Transformation of Paper Sludge		BioEnergy Research	2021: 1-11	SCI (E)	
30	Co-combustion Kinetics and Synergistic Characteristics of Sewage Sludge and Spent Coffee Grounds		Heat Transfer Researc	2021, 52(5)	SCI (E)	
75	Multiple parameters and target optimization of splitter blades for axial spiral blade blood pump using computational fluid mechanics, neural networks, and particle image velocimetry experiment,		SCIENCE PROGRESS	2021, 104(3) : 003685 042110 39363	SCI (E)	
70	Enhanced discrete phase model for multiphase flow simulation of blood flow with high shear stress		SCIENCE PROGRESS	2021, 104(1) : 003685 042110 08064	SCI (E)	
77	Heat transfer characteristics of enhanced cooling tube with a helical wire under oscillatory flow in Stirling engine		International Journal of Thermal Sciences	2021, 168: 107063	SCI (E)	

34	Effect of laser shock peening on high cycle fatigue properties of aluminized AISI 321 stainless steel		International Journal of Fatigue	2021, 147: 106180	SCI (E)	
35	Microstructure and tensile properties of AISI 321 stainless steel with aluminizing and annealing treatment		Materials & Design	2021, 205: 109729	SCI (E)	
36	High-temperature creep property and life prediction of aluminized AISI 321 stainless steel after annealing diffusion treatment		Engineering Failure Analysis	2021, 128: 105611	SCI (E)	
71				2021, 34 (03): 25-39		
38	Effect of SiC orientation and particle size on the low cycle fatigue properties of SiCp/A356 composite.		International Journal of Fatigue	2021, 152: 106420	SCI (E)	
39	Optimization of multiple laser shock peening on high-cycle fatigue performance of aluminized AISI 321 stainless steel		International Journal of Fatigue	2021, 153: 106505	SCI (E)	
40	Scaling behavior of four Co-20Ni-xCr-yAl (x		Corrosion Science	2021, 191: 109719	SCI (E)	

	= 8, 15 wt. %; y = 3, 5 wt. %) alloys exposed to 1 atm O ₂ at 1000 ° C and 1100 ° C			.		
41	A new demodulation method for mechanical fault feature extraction based on LOD and IEE		Measurement science review	2021, 21 (3) : 67-75	SCI (E)	
42				2021, 45 (08) : 38-44+69		

43 Effects of Ta content on phase transformation in selective laser melting processed Ti-13Nb-13Zr alloy and its correlation

47	Mechanism and optimized process conditions of forming one dimensional ZnO nanorods with Al-doping by electrodeposition method		International Journal of Photoenergy	2021, 2021: 1-13	SCI (E)	
48	Cost-Sensitive Extremely Randomized Trees Algorithm for Online Fault Detection of Wind Turbine Generators		Frontiers in Energy Research	2021: 234	SCI (E)	
49	Cost-Sensitive LightGBM-Based Online Fault Detection Method for Wind Turbine Gearboxes		Frontiers in Energy Research	2021, 9: 701574	SCI (E)	
50	Fault Detection for Pitch System of Wind Turbine-Driven Doubly Fed Based on IHHO-LightGBM		Applied Sciences	2021, 11(17) : 8030	SCI (E)	
51	Fault Detection of Wind Turbine Electric Pitch System Based on IGWO-ERF		Sensors	2021, 21(18) : 6215	SCI (E)	
52	Fault Diagnosis Method for Wind Turbine Gearboxes Based on IWOA-RF		Energies	2021, 14(19) : 6283	SCI (E)	
53	Review and Perspectives of Machine Learning Methods for Wind Turbine Fault		Frontiers in Energy Research	2021: 596	SCI (E)	

	Diagnosis					
54	Wind Turbine Pitch System Fault Detection Using ssODM-DSTA		Frontiers in Energy Research	2021: 502	SCI (E)	
55	Enhancement on Charge Generation and Transfer Properties of Sb ₂ S ₃ Quantum-Dot-Sensitized Solar Cells by ZnO Nanorods Optimization		Journal of Electronic Materials	2021, 50: 100-107	SCI (E)	
90	Insight into the catalytic performance and NH ₃ adsorption under high concentration of CO ₂ and/or H ₂ O conditions on selective catalytic reduction of NO by NH ₃ over V ₂ O ₅ -W ₂ O ₃ /TiO ₂ catalyst		Fuel	2021, 286: 119478	SCI (E)	
91				2021, 45 (02): 20-24		

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04				2021, 2 7(01): 90-97		
05				2021, 4 5(03): 42-50		

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2	Co-20Ni-xCr-yAl (x=8, 15 wt. %; y = 3, 5wt. %) 800 -1100			2021-11-26	

3	Adaptive building enclosure systems for year round building thermo-regulation		HEIBS	2021-11-26	
4				2021-11-27	
5	Adaptive building enclosure systems for year round building thermo-regulation		WCES2021	2021-12-10	
6	Welcome to Changsha University of Science and Technology		2021	2021-12-11	
7	/		2021	2021-12-23	
8			2021	2021-12-23	
9	Kinetic analysis of diffusive combustion of low calorific value gas in porous media		2021 8	2021-12-23	
10				2021-12-11	
11	Carbon-decorated diatomite stabilized phase change material for photo-to-thermal conversion and storage		13th International Conference on Applied Energy	2021-11-14	/ (Applied Energy)
12	Study on the thermal performance of		ICAE2021	2021-11-30	

	building enclosure with phase change materials under various climate conditions				
13				2021-12-03	()
14	Active Voltage-type Arc Suppression Device for Single-Line-to-Ground Fault in Distribution Networks with Consideration of Line Impedance		IEEE 2021 International Conference on Computer Science, Electronic Information Engineering and Intelligent Control Technology	2021-09-25	

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1	2021-05-17	245	https://www.csust.edu.cn/ndxy/info/1056/8996.htm
2	2023-05-17	2000	https://www.csust.edu.cn/ndxy/info/1056/8996.htm
3	2021-10-0	115	https://www.csust.edu.cn/ndxy/info/1423/9283.htm

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4	2021-06-23	100	https://www.csust.edu.cn/ndxy/info/1423/9122.htm

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