



ESI热点论文简报

第VII期

中国科学院高能物理研究所
文献信息部

2022-01

基于 ESI 数据库分领域热点论文简报VII

ESI 是基于汤森路透 Web of Science (SCIE/SSCI) 所收录的全球 12000 多种学术期刊的 1200 多万条文献记录而建立的计量分析数据库。ESI 针对 22 个专业领域，通过论文数、论文被引频次、论文篇均被引频次、高影响论文（高被引论文和热点论文排重后的简单和）指标，成为当今世界范围内普遍用以评价高校、学术机构、国家/地区国际学术水平及影响力的重要评价指标工具之一。该数据库基于 10 年内文献数据进行综合分析评价，每两月更新一次。

热点论文：ESI 数据库统计筛选出在过去两年内发表，且在近两月内，被引用的次数进入其学术领域前 0.1% 的论文。

细分领域：根据 WoS 数据库的领域划分选取了高能所发文比较集中的四个细分领域，“Physics, Particles & Fields”、“Physics, Nuclear”、“Astronomy & Astrophysics”和“Materials Science, Multidisciplinary”。

目录

“Physics, Particles & Fields”热点论文 32 篇.....	2
“Physics, Nuclear”热点论文 5 篇	4
“Astronomy & Astrophysics”热点论文 43 篇.....	5
“Materials Science, Multidisciplinary”热点论文 310 篇.....	9



本次简报基于 ESI 于 2022 年 1 月 13 日更新的数据，热点论文统计范围为 2019 年 11 月-2021 年 10 月发表的论文，且在 2021 年 9-10 月被引用次数进入物理领域前 0.1% 的论文。

②、③、④、⑤、⑥、⑦为对比 2021 年第一、二、三、四、五期、六期数据的重复次数

“Physics, Particles & Fields”热点论文 32 篇

1. **6** REVIEW OF PARTICLE PHYSICS. Zyla, P.A., Barnett, R.M., Beringer, J. et al. Progress of Theoretical and Experimental Physics, 2020, (2020) 083C01. Cited: 1303.
<https://doi.org/10.1093/ptep/ptaa104>
2. **7** FLAG Review 2019. Aoki, S., Aoki, Y., Becirevic, D. et al. European Physical Journal C, 80, (2020) 113. Cited: 301. <https://doi.org/10.1140/epjc/s10052-019-7354-7>
3. **7** Tests of general relativity with the binary black hole signals from the LIGO-Virgo catalog GWTC-1. Abbott, B.P., Abbott, R., Abbott, T.D. et al. Physical Review D, 100, (2019) 104036. Cited: 232. <https://doi.org/10.1103/PhysRevD.100.104036>
4. **4** The Belle II Physics Book. Kou, E., Urquijo, P., Altmannshofer, W. et al. Progress of Theoretical and Experimental Physics, 2019, (2019) 123C01. Cited: 214.
<https://doi.org/10.1093/ptep/ptz106>
5. **7** Replica wormholes and the entropy of Hawking radiation. Almheiri, A., Hartman, T., Maldacena, J. et al. Journal of High Energy Physics, (2020) 13. Cited: 213.
[https://doi.org/10.1007/JHEP05\(2020\)013](https://doi.org/10.1007/JHEP05(2020)013)
6. **7** The Page curve of Hawking radiation from semiclassical geometry. Almheiri, A., Mahajan, R., Maldacena, J. et al. Journal of High Energy Physics, (2020) 149. Cited: 197.
[https://doi.org/10.1007/JHEP03\(2020\)149](https://doi.org/10.1007/JHEP03(2020)149)
7. **3** Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. Abbott, B.P., Abbott, R., Abbott, T.D. et al. Living Reviews in Relativity, 23, (2020) 3. Cited: 193. <https://doi.org/10.1007/s41114-020-00026-9>
8. **7** Bounds on slow roll and the de Sitter Swampland. Garg, S.K. and Krishnan, C. Journal of High Energy Physics, (2019) 75. Cited: 192. [https://doi.org/10.1007/JHEP11\(2019\)075](https://doi.org/10.1007/JHEP11(2019)075)
9. **5** The fate of hints: updated global analysis of three-flavor neutrino oscillations. Esteban, I., Gonzalez-Garcia, M.C., Maltoni, M. et al. Journal of High Energy Physics, (2020) 178. Cited: 189. [https://doi.org/10.1007/JHEP09\(2020\)178](https://doi.org/10.1007/JHEP09(2020)178)
10. **5** A new evaluation of the hadronic vacuum polarisation contributions to the muon anomalous magnetic moment and to alpha(m(Z)(2)). Davier, M., Hoecker, A., Malaescu, B. et al. European Physical Journal C, 80, (2020) 241. Cited: 186.
<https://doi.org/10.1140/epjc/s10052-020-7792-2>
11. **7** Entanglement wedge reconstruction and the information paradox. Penington, G. Journal of High Energy Physics, (2020) 2. Cited: 176. [https://doi.org/10.1007/JHEP09\(2020\)002](https://doi.org/10.1007/JHEP09(2020)002)
12. **6** Excess electronic recoil events in XENON1T. Aprile, E., Aalbers, J., Agostini, F. et al. Physical Review D, 102, (2020) 72004. Cited: 153.
<https://doi.org/10.1103/PhysRevD.102.072004>

13. ② g -2 of charged leptons, alpha(M-Z(2)), and the hyperfine splitting of muonium. Keshavarzi, A., Nomura, D. and Teubner, T. Physical Review D, 101, (2020) 14029. Cited: 134.
<https://doi.org/10.1103/PhysRevD.101.014029>
14. ② New physics in light of the H-0 tension: An alternative view. Vagnozzi, S. Physical Review D, 102, (2020) 23518. Cited: 102. <https://doi.org/10.1103/PhysRevD.102.023518>
15. In the realm of the Hubble tension-a review of solutions *. Di Valentino, E., Mena, O., Pan, S. et al. Classical and Quantum Gravity, 38, (2021) 153001. Cited: 91.
<https://doi.org/10.1088/1361-6382/ac086d>
16. The joint evaluated fission and fusion nuclear data library, JEFF-3.3. Plompen, A.J.M., Cabellos, O., Jean, C.D. et al. European Physical Journal A, 56, (2020) 181. Cited: 90.
<https://doi.org/10.1140/epja/s10050-020-00141-9>
17. ③ Transcending the ensemble: baby universes, spacetime wormholes, and the order and disorder of black hole information. Marolf, D. and Maxfield, H. Journal of High Energy Physics, (2020) 44. Cited: 87. [https://doi.org/10.1007/JHEP08\(2020\)044](https://doi.org/10.1007/JHEP08(2020)044)
18. Short-distance constraints for the HLbL contribution to the muon anomalous magnetic moment. Bijnens, J., Hermansson-Truedsson, N. and Rodriguez-Sanchez, A. Physics Letters B, 798, (2019) 134994. Cited: 77. <https://doi.org/10.1016/j.physletb.2019.134994>
19. ④ 2020 global reassessment of the neutrino oscillation picture. de Salas, P.F., Forero, D.V., Gariazzo, S. et al. Journal of High Energy Physics, (2021) 71. Cited: 76.
[https://doi.org/10.1007/JHEP02\(2021\)071](https://doi.org/10.1007/JHEP02(2021)071)
20. ③ Primordial black holes as a dark matter candidate. Green, A.M. and Kavanagh, B.J. Journal of Physics G-Nuclear and Particle Physics, 48, (2021) 43001. Cited: 62.
<https://doi.org/10.1088/1361-6471/abc534>
21. ② Tests of general relativity with binary black holes from the second LIGO-Virgo gravitational-wave transient catalog. Abbott, R., Abbott, T.D., Abraham, S. et al. Physical Review D, 103, (2021) 122002. Cited: 62. <https://doi.org/10.1103/PhysRevD.103.122002>
22. Sensitivity and performance of the Advanced LIGO detectors in the third observing run. Buikema, A., Cahillane, C., Mansell, G.L. et al. Physical Review D, 102, (2020) 62003. Cited: 56. <https://doi.org/10.1103/PhysRevD.102.062003>
23. ② Completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey: Cosmological implications from two decades of spectroscopic surveys at the Apache Point Observatory. Alam, S., Aubert, M., Avila, S. et al. Physical Review D, 103, (2021) 83533. Cited: 54.
<https://doi.org/10.1103/PhysRevD.103.083533>
24. ② Averages of b-hadron, c-hadron, and tau-lepton properties as of 2018 Heavy Flavor Averaging Group (HFLAV). Amhis, Y., Banerjee, S., Ben-Haim, E. et al. European Physical Journal C, 81, (2021) 226. Cited: 53. <https://doi.org/10.1140/epjc/s10052-020-8156-7>

25. The path integral of 3D gravity near extremality or, JT gravity with defects as a matrix integral. Maxfield, H. and Turiaci, G.J. Journal of High Energy Physics, (2021) 118. Cited: 46. [https://doi.org/10.1007/JHEP01\(2021\)118](https://doi.org/10.1007/JHEP01(2021)118)
26. Update on coupled dark energy and the H-0 tension. Gomez-Valent, A., Pettorino, V. and Amendola, L. Physical Review D, 101, (2020) 123513. Cited: 36. <https://doi.org/10.1103/PhysRevD.101.123513>
27. Snowmass2021-Letter of interest cosmology intertwined II: The hubble constant tension. Di Valentino, E., Anchordoqui, L.A., Akarsu, O. et al. Astroparticle Physics, 131, (2021) 102605. Cited: 31. <https://doi.org/10.1016/j.astropartphys.2021.102605>
28. Computationally efficient models for the dominant and subdominant harmonic modes of precessing binary black holes. Pratten, G., Garcia-Quiros, C., Colleoni, M. et al. Physical Review D, 103, (2021) 104056. Cited: 27. <https://doi.org/10.1103/PhysRevD.103.104056>
29. Towards mitigation of apparent tension between nuclear physics and astrophysical observations by improved modeling of neutron star matter. Biswas, B., Char, P., Nandi, R. et al. Physical Review D, 103, (2021) 103015. Cited: 14. <https://doi.org/10.1103/PhysRevD.103.103015>
30. Positive moments for scattering amplitudes. Bellazzini, B., Miro, J.E., Rattazzi, R. et al. Physical Review D, 104, (2021) 36006. Cited: 14. <https://doi.org/10.1103/PhysRevD.104.036006>
31. Spinning black hole binary dynamics, scattering amplitudes, and effective field theory. Bern, Z., Luna, A., Roiban, R. et al. Physical Review D, 104, (2021) 65014. Cited: 14. <https://doi.org/10.1103/PhysRevD.104.065014>
32. Random statistics of OPE coefficients and Euclidean wormholes. Belin, A. and de Boer, J. Classical and Quantum Gravity, 38, (2021) 164001. Cited: 13. <https://doi.org/10.1088/1361-6382/ac1082>

“Physics, Nuclear”热点论文 5 篇

1. ⑦Phy-X / PSD: Development of a user friendly online software for calculation of parameters relevant to radiation shielding and dosimetry. Sakar, E., Ozpolat, O.F., Alim, B. et al. Radiation Physics and Chemistry, 166, (2020) 108496. Cited: 333. <https://doi.org/10.1016/j.radphyschem.2019.108496>
2. The joint evaluated fission and fusion nuclear data library, JEFF-3.3. Plompen, A.J.M., Cabellos, O., Jean, C.D. et al. European Physical Journal A, 56, (2020) 181. Cited: 90. <https://doi.org/10.1140/epja/s10050-020-00141-9>

3. Short-distance constraints for the HLbL contribution to the muon anomalous magnetic moment. Bijnens, J., Hermansson-Truedsson, N. and Rodriguez-Sanchez, A. Physics Letters B, 798, (2019) 134994. Cited: 77. <https://doi.org/10.1016/j.physletb.2019.134994>
4. ③Primordial black holes as a dark matter candidate. Green, A.M. and Kavanagh, B.J. Journal of Physics G-Nuclear and Particle Physics, 48, (2021) 43001. Cited: 62. <https://doi.org/10.1088/1361-6471/abc534>
5. Monte Carlo simulation on shielding properties of neutron-gamma from ^{252}Cf source for Alumino-Boro-Silicate glasses. Malidarre, R.B., Akkurt, I. and Kavas, T. Radiation Physics and Chemistry, 186, (2021) 109540. Cited: 10. <https://doi.org/10.1016/j.radphyschem.2021.109540>

“Astronomy & Astrophysics”热点论文 43 篇

1. ⑦Planck 2018 results: VI. Cosmological parameters. Aghanim, N., Akrami, Y., Ashdown, M. et al. Astronomy & Astrophysics, 641, (2020) A6. Cited: 2208. <https://doi.org/10.1051/0004-6361/201833910>
2. ⑦Relativistic Shapiro delay measurements of an extremely massive millisecond pulsar. Cromartie, H.T., Fonseca, E., Ransom, S.M. et al. Nature Astronomy, 4, (2020) 72. Cited: 540. <https://doi.org/10.1038/s41550-019-0880-2>
3. ⑥GW190425: Observation of a Compact Binary Coalescence with Total Mass similar to 3.4 M-circle dot. Abbott, B.P., Abbott, R., Abbott, T.D. et al. Astrophysical Journal Letters, 892, (2020) L3. Cited: 503. <https://doi.org/10.3847/2041-8213/ab75f5>
4. ⑦GW190814: Gravitational Waves from the Coalescence of a 23 Solar Mass Black Hole with a 2.6 Solar Mass Compact Object. Abbott, R., Abbott, T.D., Abraham, S. et al. Astrophysical Journal Letters, 896, (2020) L44. Cited: 474. <https://doi.org/10.3847/2041-8213/ab960f>
5. ⑦Planck 2018 results: X. Constraints on inflation. Akrami, Y., Arroja, F., Ashdown, M. et al. Astronomy & Astrophysics, 641, (2020) A10. Cited: 445. <https://doi.org/10.1051/0004-6361/201833887>
6. ⑦PSR J0030+0451 Mass and Radius from NICER Data and Implications for the Properties of Neutron Star Matter. Miller, M.C., Lamb, F.K., Dittmann, A.J. et al. Astrophysical Journal Letters, 887, (2019) L24. Cited: 379. <https://doi.org/10.3847/2041-8213/ab50c5>
7. ⑦A NICER View of PSR J0030+0451: Millisecond Pulsar Parameter Estimation. Riley, T.E., Watts, A.L., Bogdanov, S. et al. Astrophysical Journal Letters, 887, (2019) L21. Cited: 352. <https://doi.org/10.3847/2041-8213/ab481c>

8. ⑤Fermi Large Area Telescope Fourth Source Catalog. Abdollahi, S., Acero, F., Ackermann, M. et al. *Astrophysical Journal Supplement Series*, 247, (2020) 33. Cited: 344.
<https://doi.org/10.3847/1538-4365/ab6bcb>
9. ③Gaia Early Data Release 3 Summary of the contents and survey properties. Brown, A.G.A., Vallenari, A., Prusti, T. et al. *Astronomy & Astrophysics*, 649, (2021) A1. Cited: 337.
<https://doi.org/10.1051/0004-6361/202039657>
10. ⑤DYNESTY: a dynamic nested sampling package for estimating Bayesian posteriors and evidences. Speagle, J.S. *Monthly Notices of the Royal Astronomical Society*, 493, (2020) 3132. Cited: 270. <https://doi.org/10.1093/mnras/staa278>
11. ⑦The 16th Data Release of the Sloan Digital Sky Surveys: First Release from the APOGEE-2 Southern Survey and Full Release of eBOSS Spectra. Ahumada, R., Allende Prieto, C., Almeida, A. et al. *Astrophysical Journal Supplement Series*, 249, (2020) 3. Cited: 267.
<https://doi.org/10.3847/1538-4365/ab929e>
12. ④H0LiCOW-XIII. A 2.4 per cent measurement of H-0 from lensed quasars: 5.3 sigma tension between early- and late-Universe probes. Wong, K.C., Suyu, S.H., Chen, G.C.F. et al. *Monthly Notices of the Royal Astronomical Society*, 498, (2020) 1420. Cited: 240.
<https://doi.org/10.1093/mnras/stz3094>
13. ③A 3D Dust Map Based on Gaia, Pan-STARRS 1, and 2MASS. Green, G.M., Schlafly, E., Zucker, C. et al. *Astrophysical Journal*, 887, (2019) 93. Cited: 239.
<https://doi.org/10.3847/1538-4357/ab5362>
14. ⑦Tests of general relativity with the binary black hole signals from the LIGO-Virgo catalog GWTC-1. Abbott, B.P., Abbott, R., Abbott, T.D. et al. *Physical Review D*, 100, (2019) 104036. Cited: 232. <https://doi.org/10.1103/PhysRevD.100.104036>
15. ④Planck evidence for a closed Universe and a possible crisis for cosmology. Di Valentino, E., Melchiorri, A. and Silk, J. *Nature Astronomy*, 4, (2020) 196. Cited: 164.
<https://doi.org/10.1038/s41550-019-0906-9>
16. ③Estimating Distances from Parallaxes. V. Geometric and Photogeometric Distances to 1.47 Billion Stars in Gaia Early Data Release 3. Bailer-Jones, C.A.L., Rybizki, J., Fouesneau, M. et al. *Astronomical Journal*, 161, (2021) 147. Cited: 160. <https://doi.org/10.3847/1538-3881/abd806>
17. ⑥Excess electronic recoil events in XENON1T. Aprile, E., Aalbers, J., Agostini, F. et al. *Physical Review D*, 102, (2020) 72004. Cited: 153.
<https://doi.org/10.1103/PhysRevD.102.072004>
18. ③The NANOGrav 12.5 yr Data Set: Search for an Isotropic Stochastic Gravitational-wave Background. Arzoumanian, Z., Baker, P.T., Blumer, H. et al. *Astrophysical Journal Letters*, 905, (2020) L34. Cited: 152. <https://doi.org/10.3847/2041-8213/abd401>

19. ② g_2 -2 of charged leptons, alpha(M-Z(2)), and the hyperfine splitting of muonium. Keshavarzi, A., Nomura, D. and Teubner, T. Physical Review D, 101, (2020) 14029. Cited: 134. <https://doi.org/10.1103/PhysRevD.101.014029>
20. Gaia Early Data Release 3 The astrometric solution. Lindegren, L., Klioner, S.A., Hernandez, J. et al. Astronomy & Astrophysics, 649, (2021) . Cited: 105. <https://doi.org/10.1051/0004-6361/202039709>
21. ② Cosmic Distances Calibrated to 1% Precision with Gaia EDR3 Parallaxes and Hubble Space Telescope Photometry of 75 Milky Way Cepheids Confirm Tension with ?CDM. Riess, A.G., Casertano, S., Yuan, W.L. et al. Astrophysical Journal Letters, 908, (2021) L6. Cited: 104. <https://doi.org/10.3847/2041-8213/abdbaf>
22. ② New physics in light of the H-0 tension: An alternative view. Vagnozzi, S. Physical Review D, 102, (2020) 23518. Cited: 102. <https://doi.org/10.1103/PhysRevD.102.023518>
23. ④ INTEGRAL Discovery of a Burst with Associated Radio Emission from the Magnetar SGR 1935+2154. Mereghetti, S., Savchenko, V., Ferrigno, C. et al. Astrophysical Journal Letters, 898, (2020) L29. Cited: 101. <https://doi.org/10.3847/2041-8213/aba2cf>
24. In the realm of the Hubble tension-a review of solutions *. Di Valentino, E., Mena, O., Pan, S. et al. Classical and Quantum Gravity, 38, (2021) 153001. Cited: 91. <https://doi.org/10.1088/1361-6382/ac086d>
25. Population Properties of Compact Objects from the Second LIGO-Virgo Gravitational-Wave Transient Catalog. Abbott, B.P., Abbott, R., Abbott, T.D. et al. Astrophysical Journal Letters, 913, (2021) L7. Cited: 83. <https://doi.org/10.3847/2041-8213/abe949>
26. Short-distance constraints for the HLbL contribution to the muon anomalous magnetic moment. Bijnen, J., Hermansson-Truedsson, N. and Rodriguez-Sanchez, A. Physics Letters B, 798, (2019) 134994. Cited: 77. <https://doi.org/10.1016/j.physletb.2019.134994>
27. Observation of Gravitational Waves from Two Neutron Star-Black Hole Coalescences. Abbott, R., Abbott, T.D., Abraham, S. et al. Astrophysical Journal Letters, 915, (2021) L5. Cited: 72. <https://doi.org/10.3847/2041-8213/ac082e>
28. Nuclear star clusters. Neumayer, N., Seth, A. and Boker, T. Astronomy and Astrophysics Review, 28, (2020) 4. Cited: 65. <https://doi.org/10.1007/s00159-020-00125-0>
29. ② Tests of general relativity with binary black holes from the second LIGO-Virgo gravitational-wave transient catalog. Abbott, R., Abbott, T.D., Abraham, S. et al. Physical Review D, 103, (2021) 122002. Cited: 62. <https://doi.org/10.1103/PhysRevD.103.122002>
30. ② KiDS-1000 cosmology: Cosmic shear constraints and comparison between two point statistics. Asgari, M., Lin, C.A., Joachimi, B. et al. Astronomy & Astrophysics, 645, (2021) A104. Cited: 59. <https://doi.org/10.1051/0004-6361/202039070>

31. Aerosol composition of hot giant exoplanets dominated by silicates and hydrocarbon hazes. Gao, P., Thorngren, D.P., Lee, G.K.H. et al. *Nature Astronomy*, 4, (2020) 951. Cited: 58. <https://doi.org/10.1038/s41550-020-1114-3>
32. Sensitivity and performance of the Advanced LIGO detectors in the third observing run. Buikema, A., Cahillane, C., Mansell, G.L. et al. *Physical Review D*, 102, (2020) 62003. Cited: 56. <https://doi.org/10.1103/PhysRevD.102.062003>
33. ESPRESSO at VLT: On-sky performance and first results. Pepe, F., Cristiani, S., Rebolo, R. et al. *Astronomy & Astrophysics*, 645, (2021) A96. Cited: 56. <https://doi.org/10.1051/0004-6361/202038306>
34. ②Completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey: Cosmological implications from two decades of spectroscopic surveys at the Apache Point Observatory. Alam, S., Aubert, M., Avila, S. et al. *Physical Review D*, 103, (2021) 83533. Cited: 54. <https://doi.org/10.1103/PhysRevD.103.083533>
35. Update on coupled dark energy and the H-0 tension. Gomez-Valent, A., Pettorino, V. and Amendola, L. *Physical Review D*, 101, (2020) 123513. Cited: 36. <https://doi.org/10.1103/PhysRevD.101.123513>
36. Refined Mass and Geometric Measurements of the High-mass PSR J0740+6620. Fonseca, E., Cromartie, H.T., Pennucci, T.T. et al. *Astrophysical Journal Letters*, 915, (2021) L12. Cited: 34. <https://doi.org/10.3847/2041-8213/ac03b8>
37. Snowmass2021-Letter of interest cosmology intertwined II: The hubble constant tension. Di Valentino, E., Anchordoqui, L.A., Akarsu, O. et al. *Astroparticle Physics*, 131, (2021) 102605. Cited: 31. <https://doi.org/10.1016/j.astropartphys.2021.102605>
38. Computationally efficient models for the dominant and subdominant harmonic modes of precessing binary black holes. Pratten, G., Garcia-Quiros, C., Colleoni, M. et al. *Physical Review D*, 103, (2021) 104056. Cited: 27. <https://doi.org/10.1103/PhysRevD.103.104056>
39. On the Hubble Constant Tension in the SNe Ia Pantheon Sample. Dainotti, M.G., De Simone, B., Schiavone, T. et al. *Astrophysical Journal*, 912, (2021) 150. Cited: 19. <https://doi.org/10.3847/1538-4357/abeb73>
40. Towards mitigation of apparent tension between nuclear physics and astrophysical observations by improved modeling of neutron star matter. Biswas, B., Char, P., Nandi, R. et al. *Physical Review D*, 103, (2021) 103015. Cited: 14. <https://doi.org/10.1103/PhysRevD.103.103015>
41. Positive moments for scattering amplitudes. Bellazzini, B., Miro, J.E., Rattazzi, R. et al. *Physical Review D*, 104, (2021) 36006. Cited: 14. <https://doi.org/10.1103/PhysRevD.104.036006>

42. Spinning black hole binary dynamics, scattering amplitudes, and effective field theory. Bern, Z., Luna, A., Roiban, R. et al. Physical Review D, 104, (2021) 65014. Cited: 14. <https://doi.org/10.1103/PhysRevD.104.065014>
43. Random statistics of OPE coefficients and Euclidean wormholes. Belin, A. and de Boer, J. Classical and Quantum Gravity, 38, (2021) 164001. Cited: 13. <https://doi.org/10.1088/1361-6382/ac1082>

“Materials Science, Multidisciplinary”热点论文 310 篇

1. ⑦ Present and Future of Surface-Enhanced Raman Scattering. Langer, J., de Aberasturi, D.J., Aizpurua, J. et al. Acs Nano, 14, (2020) 28. Cited: 726. <https://doi.org/10.1021/acsnano.9b04224>
2. ⑦ Single-Junction Organic Photovoltaic Cells with Approaching 18% Efficiency. Cui, Y., Yao, H.F., Zhang, J.Q. et al. Advanced Materials, 32, (2020) 1908205. Cited: 721. <https://doi.org/10.1002/adma.201908205>
3. ⑦ Diagnosing COVID-19: The Disease and Tools for Detection. Udugama, B., Kadhiresan, P., Kozlowski, H.N. et al. Acs Nano, 14, (2020) 3822. Cited: 650. <https://doi.org/10.1021/acsnano.0c02624>
4. ⑦ A Review of Perovskites Solar Cell Stability. Wang, R., Mujahid, M., Duan, Y. et al. Advanced Functional Materials, 29, (2019) 1808843. Cited: 517. <https://doi.org/10.1002/adfm.201808843>
5. ⑦ Fundamentals of inorganic solid-state electrolytes for batteries. Famprikis, T., Canepa, P., Dawson, J.A. et al. Nature Materials, 18, (2019) 1278. Cited: 478. <https://doi.org/10.1038/s41563-019-0431-3>
6. ⑦ Self-Supported Transition-Metal-Based Electrocatalysts for Hydrogen and Oxygen Evolution. Sun, H.M., Yan, Z.H., Liu, F.M. et al. Advanced Materials, 32, (2020) 1806326. Cited: 464. <https://doi.org/10.1002/adma.201806326>
7. ⑦ X-ray photoelectron spectroscopy: Towards reliable binding energy referencing. Greczynski, G. and Hultman, L. Progress in Materials Science, 107, (2020) 100591. Cited: 453. <https://doi.org/10.1016/j.pmatsci.2019.100591>
8. ⑦ The entry of nanoparticles into solid tumours. Sindhwan, S., Syed, A.M., Ngai, J. et al. Nature Materials, 19, (2020) 566. Cited: 438. <https://doi.org/10.1038/s41563-019-0566-2>
9. ⑦ Alkyl Chain Tuning of Small Molecule Acceptors for Efficient Organic Solar Cells. Jiang, K., Wei, Q.Y., Lai, J.Y.L. et al. Joule, 3, (2019) 3020. Cited: 392. <https://doi.org/10.1016/j.joule.2019.09.010>

10. ⑦ Managing grains and interfaces via ligand anchoring enables 22.3%-efficiency inverted perovskite solar cells. Zheng, X.P., Hou, Y., Bao, C.X. et al. *Nature Energy*, 5, (2020) 131. Cited: 388. <https://doi.org/10.1038/s41560-019-0538-4>
11. ⑦ Achieving high energy density and high power density with pseudocapacitive materials. Choi, C., Ashby, D.S., Butts, D.M. et al. *Nature Reviews Materials*, 5, (2020) 5. Cited: 386. <https://doi.org/10.1038/s41578-019-0142-z>
12. ⑦ Cd-Free Cu(In,Ga)(Se,S)(2) Thin-Film Solar Cell With Record Efficiency of 23.35%. Nakamura, M., Yamaguchi, K., Kimoto, Y. et al. *Ieee Journal of Photovoltaics*, 9, (2019) 1863. Cited: 379. <https://doi.org/10.1109/JPHOTOV.2019.2937218>
13. ⑦ Dual-Functional Plasmonic Photothermal Biosensors for Highly Accurate Severe Acute Respiratory Syndrome Coronavirus 2 Detection. Qiu, G.G., Gai, Z.B., Tao, Y.L. et al. *Acs Nano*, 14, (2020) 5268. Cited: 358. <https://doi.org/10.1021/acsnano.0c02439>
14. ⑦ Aerosol Filtration Efficiency of Common Fabrics Used in Respiratory Cloth Masks. Konda, A., Prakash, A., Moss, G.A. et al. *Acs Nano*, 14, (2020) 6339. Cited: 352. <https://doi.org/10.1021/acsnano.0c03252>
15. ⑦ Smart cancer nanomedicine. van der Meel, R., Sulheim, E., Shi, Y. et al. *Nature Nanotechnology*, 14, (2019) 1007. Cited: 335. <https://doi.org/10.1038/s41565-019-0567-y>
16. ⑦ Designing solid-state electrolytes for safe, energy-dense batteries. Zhao, Q., Stalin, S., Zhao, C.Z. et al. *Nature Reviews Materials*, 5, (2020) 229. Cited: 320. <https://doi.org/10.1038/s41578-019-0165-5>
17. ⑦ On the origin of contact-electrification. Wang, Z.L. and Wang, A.C. *Materials Today*, 30, (2019) 34. Cited: 312. <https://doi.org/10.1016/j.mattod.2019.05.016>
18. ⑦ High-nickel layered oxide cathodes for lithium-based automotive batteries. Li, W.D., Erickson, E.M. and Manthiram, A. *Nature Energy*, 5, (2020) 26. Cited: 302. <https://doi.org/10.1038/s41560-019-0513-0>
19. ⑥ Minimizing non-radiative recombination losses in perovskite solar cells. Luo, D.Y., Su, R., Zhang, W. et al. *Nature Reviews Materials*, 5, (2020) 44. Cited: 301. <https://doi.org/10.1038/s41578-019-0151-y>
20. ⑦ Scientific Challenges for the Implementation of Zn-Ion Batteries. Blanc, L.E., Kundu, D. and Nazar, L.F. *Joule*, 4, (2020) 771. Cited: 297. <https://doi.org/10.1016/j.joule.2020.03.002>
21. ⑥ Perspectives for electrochemical capacitors and related devices. Simon, P. and Gogotsi, Y. *Nature Materials*, 19, (2020) 1151. Cited: 285. <https://doi.org/10.1038/s41563-020-0747-z>
22. ⑦ High-energy long-cycling all-solid-state lithium metal batteries enabled by silver-carbon composite anodes. Lee, Y.G., Fujiki, S., Jung, C. et al. *Nature Energy*, 5, (2020) 299. Cited: 282. <https://doi.org/10.1038/s41560-020-0575-z>

23. ⑦ Consensus statement for stability assessment and reporting for perovskite photovoltaics based on ISOS procedures. Khenkin, M.V., Katz, E.A., Abate, A. et al. *Nature Energy*, 5, (2020) 35. Cited: 275. <https://doi.org/10.1038/s41560-019-0529-5>
24. ⑦ 3D printing of Aluminium alloys: Additive Manufacturing of Aluminium alloys using selective laser melting. Aboulkhair, N.T., Simonelli, M., Parry, L. et al. *Progress in Materials Science*, 106, (2019) 100578. Cited: 266. <https://doi.org/10.1016/j.pmatsci.2019.100578>
25. ⑤ Non-Noble-Metal-Based Electrocatalysts toward the Oxygen Evolution Reaction. Wu, Z.P., Lu, X.F., Zang, S.Q. et al. *Advanced Functional Materials*, 30, (2020) 1910274. Cited: 248. <https://doi.org/10.1002/adfm.201910274>
26. ⑤ High-entropy ceramics. Oses, C., Toher, C. and Curtarolo, S. *Nature Reviews Materials*, 5, (2020) 295. Cited: 240. <https://doi.org/10.1038/s41578-019-0170-8>
27. ④ A general Lewis acidic etching route for preparing MXenes with enhanced electrochemical performance in non-aqueous electrolyte. Li, Y.B., Shao, H., Lin, Z.F. et al. *Nature Materials*, 19, (2020) 894. Cited: 233. <https://doi.org/10.1038/s41563-020-0657-0>
28. ⑦ Modulating the local coordination environment of single-atom catalysts for enhanced catalytic performance. Li, X.Y., Rong, H.P., Zhang, J.T. et al. *Nano Research*, 13, (2020) 1842. Cited: 232. <https://doi.org/10.1007/s12274-020-2755-3>
29. ④ Graphdiyne Derivative as Multifunctional Solid Additive in Binary Organic Solar Cells with 17.3% Efficiency and High Reproductivity. Liu, L., Kan, Y.Y., Gao, K. et al. *Advanced Materials*, 32, (2020) 1907604. Cited: 227. <https://doi.org/10.1002/adma.201907604>
30. ⑥ Materials for solar-powered water evaporation. Zhao, F., Guo, Y.H., Zhou, X.Y. et al. *Nature Reviews Materials*, 5, (2020) 388. Cited: 226. <https://doi.org/10.1038/s41578-020-0182-4>
31. ⑤ Metal-Based Nanoparticles as Antimicrobial Agents: An Overview. Sanchez-Lopez, E., Gomes, D., Esteruelas, G. et al. *Nanomaterials*, 10, (2020) 292. Cited: 226. <https://doi.org/10.3390/nano10020292>
32. ⑥ New Phase for Organic Solar Cell Research: Emergence of Y-Series Electron Acceptors and Their Perspectives. Li, S.X., Li, C.Z., Shi, M.M. et al. *Acs Energy Letters*, 5, (2020) 1554. Cited: 223. <https://doi.org/10.1021/acsenergylett.0c00537>
33. ⑦ Benchmarking the performance of all-solid-state lithium batteries. Randau, S., Weber, D.A., Kotz, O. et al. *Nature Energy*, 5, (2020) 259. Cited: 222. <https://doi.org/10.1038/s41560-020-0565-1>
34. ⑥ The stiffness of living tissues and its implications for tissue engineering. Guimaraes, C.F., Gasperini, L., Marques, A.P. et al. *Nature Reviews Materials*, 5, (2020) 351. Cited: 221. <https://doi.org/10.1038/s41578-019-0169-1>

35. ⑥ COVID-19 vaccine development and a potential nanomaterial path forward. Shin, M.D., Shukla, S., Chung, Y.H. et al. *Nature Nanotechnology*, 15, (2020) 646. Cited: 218. <https://doi.org/10.1038/s41565-020-0737-y>
36. ⑦ Solar cell efficiency tables (version 56). Green, M.A., Dunlop, E.D., Hohl-Ebinger, J. et al. *Progress in Photovoltaics*, 28, (2020) 629. Cited: 217. <https://doi.org/10.1002/pip.3303>
37. ⑤ Understanding interface stability in solid-state batteries. Xiao, Y.H., Wang, Y., Bo, S.H. et al. *Nature Reviews Materials*, 5, (2020) 105. Cited: 215. <https://doi.org/10.1038/s41578-019-0157-5>
38. ④ Materials, technological status, and fundamentals of PEM fuel cells - A review. Wang, Y., Diaz, D.F.R., Chen, K.S. et al. *Materials Today*, 32, (2020) 178. Cited: 214. <https://doi.org/10.1016/j.mattod.2019.06.005>
39. ④ Selective organ targeting (SORT) nanoparticles for tissue-specific mRNA delivery and CRISPR-Cas gene editing. Cheng, Q., Wei, T., Farbiak, L. et al. *Nature Nanotechnology*, 15, (2020) 313. Cited: 214. <https://doi.org/10.1038/s41565-020-0669-6>
40. ⑤ High entropy alloys: A focused review of mechanical properties and deformation mechanisms. George, E.P., Curtin, W.A. and Tasan, C.C. *Acta Materialia*, 188, (2020) 435. Cited: 212. <https://doi.org/10.1016/j.actamat.2019.12.015>
41. ⑤ Multicenter Metal-Organic Framework-Based Ratiometric Fluorescent Sensors. Wu, S.Y., Min, H., Shi, W. et al. *Advanced Materials*, 32, (2020) 1805871. Cited: 211. <https://doi.org/10.1002/adma.201805871>
42. ⑦ Advanced Electrocatalysts for the Oxygen Reduction Reaction in Energy Conversion Technologies. Tian, X.L., Lu, X.F., Xia, B.Y. et al. *Joule*, 4, (2020) 45. Cited: 210. <https://doi.org/10.1016/j.joule.2019.12.014>
43. ⑦ Gas sensing mechanisms of metal oxide semiconductors: a focus review. Ji, H.C., Zeng, W. and Li, Y.Q. *Nanoscale*, 11, (2019) 22664. Cited: 206. <https://doi.org/10.1039/c9nr07699a>
44. ④ Atomic-level tuning of Co-N-C catalyst for high-performance electrochemical H₂O₂ production. Jung, E., Shin, H., Lee, B.H. et al. *Nature Materials*, 19, (2020) 436. Cited: 203. <https://doi.org/10.1038/s41563-019-0571-5>
45. ① Hydrogel Adhesion: A Supramolecular Synergy of Chemistry, Topology, and Mechanics. Yang, J.W., Bai, R.B., Chen, B.H. et al. *Advanced Functional Materials*, 30, (2020) 1901693. Cited: 200. <https://doi.org/10.1002/adfm.201901693>
46. ⑤ Additive Engineering for Efficient and Stable Perovskite Solar Cells. Zhang, F. and Zhu, K. *Advanced Energy Materials*, 10, (2020) 1902579. Cited: 191. <https://doi.org/10.1002/aenm.201902579>

47. ③Scalable Manufacturing of Free-Standing, Strong Ti₃C₂Tx MXene Films with Outstanding Conductivity. Zhang, J.Z., Kong, N., Uzun, S. et al. Advanced Materials, 32, (2020) 2001093. Cited: 191. <https://doi.org/10.1002/adma.202001093>
48. ②Non-fullerene acceptors with branched side chains and improved molecular packing to exceed 18% efficiency in organic solar cells. Li, C., Zhou, J.D., Song, J.L. et al. Nature Energy, 6, (2021) 605. Cited: 191. <https://doi.org/10.1038/s41560-021-00820-x>
49. ③A review of energy harvesting using piezoelectric materials: state-of-the-art a decade later (2008-2018). Safaei, M., Sodano, H.A. and Anton, S.R. Smart Materials and Structures, 28, (2019) 113001. Cited: 190. <https://doi.org/10.1088/1361-665X/ab36e4>
50. ③SLM lattice structures: Properties, performance, applications and challenges. Maconachie, T., Leary, M., Lozanovski, B. et al. Materials & Design, 183, (2019) 108137. Cited: 189. <https://doi.org/10.1016/j.matdes.2019.108137>
51. ⑦Fine-Tuning Energy Levels via Asymmetric End Groups Enables Polymer Solar Cells with Efficiencies over 17%. Luo, Z.H., Ma, R.J., Liu, T. et al. Joule, 4, (2020) 1236. Cited: 189. <https://doi.org/10.1016/j.joule.2020.03.023>
52. ⑥Bipolar-shell resurfacing for blue LEDs based on strongly confined perovskite quantum dots. Dong, Y.T., Wang, Y.K., Yuan, F.L. et al. Nature Nanotechnology, 15, (2020) 668. Cited: 185. <https://doi.org/10.1038/s41565-020-0714-5>
53. ②X-ray diffraction analysis by Williamson-Hall, Halder-Wagner and size-strain plot methods of CdSe nanoparticles- a comparative study. Nath, D., Singh, F. and Das, R. Materials Chemistry and Physics, 239, (2020) 122021. Cited: 184. <https://doi.org/10.1016/j.matchemphys.2019.122021>
54. ⑤Covalent-Organic Frameworks: Advanced Organic Electrode Materials for Rechargeable Batteries. Sun, T., Xie, J., Guo, W. et al. Advanced Energy Materials, 10, (2020) 1904199. Cited: 183. <https://doi.org/10.1002/aenm.201904199>
55. ⑤Current status and future directions of multivalent metal-ion batteries. Liang, Y.L., Dong, H., Aurbach, D. et al. Nature Energy, 5, (2020) 646. Cited: 183. <https://doi.org/10.1038/s41560-020-0655-0>
56. Resistive switching materials for information processing. Wang, Z.R., Wu, H.Q., Burr, G.W. et al. Nature Reviews Materials, 5, (2020) 173. Cited: 177. <https://doi.org/10.1038/s41578-019-0159-3>
57. ②Unleaded Perovskites: Status Quo and Future Prospects of Tin-Based Perovskite Solar Cells. Ke, W.J., Stoumpos, C.C. and Kanatzidis, M.G. Advanced Materials, 31, (2019) . Cited: 174. <https://doi.org/10.1002/adma.201803230>
58. ②Hydrogel machines. Liu, X.Y., Liu, J., Lin, S.T. et al. Materials Today, 36, (2020) 102. Cited: 173. <https://doi.org/10.1016/j.mattod.2019.12.026>

59. ③Steels in additive manufacturing: A review of their microstructure and properties. Bajaj, P., Hariharan, A., Kini, A. et al. Materials Science and Engineering a-Structural Materials Properties Microstructure and Processing, 772, (2020) 138633. Cited: 172.
<https://doi.org/10.1016/j.msea.2019.138633>
60. ④Self-Assembled Monolayer Enables Hole Transport Layer-Free Organic Solar Cells with 18% Efficiency and Improved Operational Stability. Lin, Y.B., Firdaus, Y., Isikgor, F.H. et al. Acs Energy Letters, 5, (2020) 2935. Cited: 171. <https://doi.org/10.1021/acsenergylett.0c01421>
61. ②Hydrogel microparticles for biomedical applications. Daly, A.C., Riley, L., Segura, T. et al. Nature Reviews Materials, 5, (2020) 20. Cited: 169. <https://doi.org/10.1038/s41578-019-0148-6>
62. ②Review of the use of transition-metal-oxide and conducting polymer-based fibres for high-performance supercapacitors. Abdah, M., Azman, N.H.N., Kulandaivalu, S. et al. Materials & Design, 186, (2020) 108199. Cited: 168. <https://doi.org/10.1016/j.matdes.2019.108199>
63. ⑤Review on spintronics: Principles and device applications. Hirohata, A., Yamada, K., Nakatani, Y. et al. Journal of Magnetism and Magnetic Materials, 509, (2020) 166711. Cited: 167. <https://doi.org/10.1016/j.jmmm.2020.166711>
64. ⑤Metal halide perovskites for light-emitting diodes. Liu, X.K., Xu, W.D., Bai, S. et al. Nature Materials, 20, (2021) 10. Cited: 167. <https://doi.org/10.1038/s41563-020-0784-7>
65. ③Materials design for bone-tissue engineering. Koons, G.L., Diba, M. and Mikos, A.G. Nature Reviews Materials, 5, (2020) 584. Cited: 166. <https://doi.org/10.1038/s41578-020-0204-2>
66. ⑦Rapid Detection of COVID-19 Causative Virus (SARS-CoV-2) in Human Nasopharyngeal Swab Specimens Using Field-Effect Transistor-Based Biosensor. Seo, G., Lee, G., Kim, M.J. et al. Acs Nano, 14, (2020) 5135. Cited: 163. <https://doi.org/10.1021/acsnano.0c02823>
67. ④An In-Depth Study of Zn Metal Surface Chemistry for Advanced Aqueous Zn-Ion Batteries. Hao, J.N., Li, B., Li, X.L. et al. Advanced Materials, 32, (2020) 2003021. Cited: 163. <https://doi.org/10.1002/adma.202003021>
68. Current progress of Pt and Pt-based electrocatalysts used for fuel cells. Ren, X.F., Lv, Q.Y., Liu, L.F. et al. Sustainable Energy & Fuels, 4, (2020) 15. Cited: 162.
<https://doi.org/10.1039/c9se00460b>
69. ④Correlated electronic phases in twisted bilayer transition metal dichalcogenides. Wang, L., Shih, E.M., Ghiotto, A. et al. Nature Materials, 19, (2020) 861. Cited: 162.
<https://doi.org/10.1038/s41563-020-0708-6>
70. ②Production and processing of graphene and related materials. Backes, C., Abdelkader, A.M., Alonso, C. et al. 2d Materials, 7, (2020) 22001. Cited: 161.
<https://doi.org/10.1088/2053-1583/ab1e0a>

71. ⑤Dynamic stability of active sites in hydr(oxy)oxides for the oxygen evolution reaction. Chung, D.Y., Lopes, P.P., Martins, P. et al. *Nature Energy*, 5, (2020) 222. Cited: 160. <https://doi.org/10.1038/s41560-020-0576-y>
72. ②Recent Development of Ni/Fe-Based Micro/Nanostructures toward Photo/Electrochemical Water Oxidation. Gao, R. and Yan, D.P. *Advanced Energy Materials*, 10, (2020) 1900954. Cited: 160. <https://doi.org/10.1002/aenm.201900954>
73. ②Charge transport in high-mobility conjugated polymers and molecular semiconductors. Fratini, S., Nikolka, M., Salleo, A. et al. *Nature Materials*, 19, (2020) 491. Cited: 159. <https://doi.org/10.1038/s41563-020-0647-2>
74. ④Structural transformation of highly active metal-organic framework electrocatalysts during the oxygen evolution reaction. Zhao, S.L., Tan, C.H., He, C.T. et al. *Nature Energy*, 5, (2020) 881. Cited: 158. <https://doi.org/10.1038/s41560-020-00709-1>
75. ③Layer-by-Layer Processed Ternary Organic Photovoltaics with Efficiency over 18%. Zhan, L.L., Li, S.X., Xia, X.X. et al. *Advanced Materials*, 33, (2021) 2007231. Cited: 157. <https://doi.org/10.1002/adma.202007231>
76. ④Interface Engineering of Hierarchical Branched Mo-Doped Ni₃S₂/Ni_xPy Hollow Heterostructure Nanorods for Efficient Overall Water Splitting. Luo, X., Ji, P.X., Wang, P.Y. et al. *Advanced Energy Materials*, 10, (2020) 1903891. Cited: 153. <https://doi.org/10.1002/aenm.201903891>
77. ④Ultraflexible and Mechanically Strong Double-Layered Aramid Nanofiber-Ti₃C₂Tx MXene/Silver Nanowire Nanocomposite Papers for High-Performance Electromagnetic Interference Shielding. Ma, Z.L., Kang, S.L., Ma, J.Z. et al. *Acs Nano*, 14, (2020) 8368. Cited: 153. <https://doi.org/10.1021/acsnano.0c02401>
78. ⑤Fluorinated Solid-Electrolyte Interphase in High-Voltage Lithium Metal Batteries. Li, T., Zhang, X.Q., Shi, P. et al. *Joule*, 3, (2019) 2647. Cited: 152. <https://doi.org/10.1016/j.joule.2019.09.022>
79. ②ImmuCellAI: A Unique Method for Comprehensive T-Cell Subsets Abundance Prediction and its Application in Cancer Immunotherapy. Miao, Y.R., Zhang, Q., Lei, Q. et al. *Advanced Science*, 7, (2020) 1902880. Cited: 152. <https://doi.org/10.1002/advs.201902880>
80. ④Six-junction III-V solar cells with 47.1% conversion efficiency under 143 Suns concentration. Geisz, J.F., France, R.M., Schulte, K.L. et al. *Nature Energy*, 5, (2020) 326. Cited: 151. <https://doi.org/10.1038/s41560-020-0598-5>
81. ②Room-temperature phosphorescence from organic aggregates. Zhao, W.J., He, Z.K. and Tang, B.Z. *Nature Reviews Materials*, 5, (2020) 869. Cited: 151. <https://doi.org/10.1038/s41578-020-0223-z>

82. ⑤Decoupling electrolytes towards stable and high-energy rechargeable aqueous zinc-manganese dioxide batteries. Zhong, C., Liu, B., Ding, J. et al. *Nature Energy*, 5, (2020) 440. Cited: 150. <https://doi.org/10.1038/s41560-020-0584-y>
83. Amorphous Catalysts and Electrochemical Water Splitting: An Untold Story of Harmony. Anantharaj, S. and Noda, S. *Small*, 16, (2020) 1905779. Cited: 149. <https://doi.org/10.1002/smll.201905779>
84. ③Designing Dendrite-Free Zinc Anodes for Advanced Aqueous Zinc Batteries. Hao, J.N., Li, X.L., Zhang, S.L. et al. *Advanced Functional Materials*, 30, (2020) 2001263. Cited: 149. <https://doi.org/10.1002/adfm.202001263>
85. ③Structure-property-function relationships of natural and engineered wood. Chen, C.J., Kuang, Y.D., Zhu, S.Z. et al. *Nature Reviews Materials*, 5, (2020) 642. Cited: 148. <https://doi.org/10.1038/s41578-020-0195-z>
86. ⑦Lightweight and robust rGO/sugarcane derived hybrid carbon foams with outstanding EMI shielding performance. Wang, L., Shi, X.T., Zhang, J.L. et al. *Journal of Materials Science & Technology*, 52, (2020) 119. Cited: 146. <https://doi.org/10.1016/j.jmst.2020.03.029>
87. ④All-perovskite tandem solar cells with 24.2% certified efficiency and area over 1 cm²using surface-anchoring zwitterionic antioxidant. Xiao, K., Lin, R.X., Han, Q.L. et al. *Nature Energy*, 5, (2020) 870. Cited: 144. <https://doi.org/10.1038/s41560-020-00705-5>
88. ②GSH-Depleted PtCu3 Nanocages for Chemodynamic- Enhanced Sonodynamic Cancer Therapy. Zhong, X.Y., Wang, X.W., Cheng, L. et al. *Advanced Functional Materials*, 30, (2020) 1907954. Cited: 143. <https://doi.org/10.1002/adfm.201907954>
89. ②3D printing of hydrogels: Rational design strategies and emerging biomedical applications. Li, J.H., Wu, C.T., Chu, P.K. et al. *Materials Science & Engineering R-Reports*, 140, (2020) 100543. Cited: 141. <https://doi.org/10.1016/j.mser.2020.100543>
90. ②Chemical recycling to monomer for an ideal, circular polymer economy. Coates, G.W. and Getzler, Y. *Nature Reviews Materials*, 5, (2020) 501. Cited: 140. <https://doi.org/10.1038/s41578-020-0190-4>
91. ⑤Molecular design for electrolyte solvents enabling energy-dense and long-cycling lithium metal batteries. Yu, Z., Wang, H.S., Kong, X. et al. *Nature Energy*, 5, (2020) 526. Cited: 140. <https://doi.org/10.1038/s41560-020-0634-5>
92. ④Passivating contacts for crystalline silicon solar cells. Allen, T.G., Bullock, J., Yang, X.B. et al. *Nature Energy*, 4, (2019) 914. Cited: 139. <https://doi.org/10.1038/s41560-019-0463-6>
93. ⑤Realizing high zinc reversibility in rechargeable batteries. Ma, L., Schroeder, M.A., Borodin, O. et al. *Nature Energy*, 5, (2020) 743. Cited: 139. <https://doi.org/10.1038/s41560-020-0674-x>

94. ②Electrode Degradation in Lithium-Ion Batteries. Pender, J.P., Jha, G., Youn, D.H. et al. Acs Nano, 14, (2020) 1243. Cited: 138. <https://doi.org/10.1021/acsnano.9b04365>
95. ⑤Mechanically Robust All-Polymer Solar Cells from Narrow Band Gap Acceptors with Hetero-Bridging Atoms. Fan, Q.P., Su, W.Y., Chen, S.S. et al. Joule, 4, (2020) 658. Cited: 137. <https://doi.org/10.1016/j.joule.2020.01.014>
96. ⑤An sp-hybridized all-carboatomic ring, cyclo 18 carbon: Electronic structure, electronic spectrum, and optical nonlinearity. Liu, Z.Y., Lu, T. and Chen, Q.X. Carbon, 165, (2020) 461. Cited: 137. <https://doi.org/10.1016/j.carbon.2020.05.023>
97. Ionomer distribution control in porous carbon-supported catalyst layers for high-power and low Pt-loaded proton exchange membrane fuel cells. Ott, S., Orfanidi, A., Schmies, H. et al. Nature Materials, 19, (2020) 77. Cited: 136. <https://doi.org/10.1038/s41563-019-0487-0>
98. ④Tuning the interlayer spacing of graphene laminate films for efficient pore utilization towards compact capacitive energy storage. Li, Z.N., Gadipelli, S., Li, H.C. et al. Nature Energy, 5, (2020) 160. Cited: 134. <https://doi.org/10.1038/s41560-020-0560-6>
99. Subtractive manufacturing of stable hierarchical micro-nano structures on AA5052 sheet with enhanced water repellence and durable corrosion resistance. Li, X.W., Shi, T., Li, B. et al. Materials & Design, 183, (2019) 108152. Cited: 133. <https://doi.org/10.1016/j.matdes.2019.108152>
100. ③Extra storage capacity in transition metal oxide lithium-ion batteries revealed by in situ magnetometry. Li, Q., Li, H.S., Xia, Q.T. et al. Nature Materials, 20, (2021) 76. Cited: 133. <https://doi.org/10.1038/s41563-020-0756-y>
101. ②Flexible Carbon-Fiber/Semimetal Bi Nanosheet Arrays as Separable and Recyclable Plasmonic Photocatalysts and Photoelectrocatalysts. Yang, Y.L., Chen, H.J., Zou, X.X. et al. Acs Applied Materials & Interfaces, 12, (2020) 24845. Cited: 132. <https://doi.org/10.1021/acsami.0c05695>
102. ④A Roadmap to the Ammonia Economy. MacFarlane, D.R., Cherepanov, P.V., Choi, J. et al. Joule, 4, (2020) 1186. Cited: 132. <https://doi.org/10.1016/j.joule.2020.04.004>
103. ③Recycling End-of-Life Electric Vehicle Lithium-Ion Batteries. Chen, M.Y., Ma, X.T., Chen, B. et al. Joule, 3, (2019) 2622. Cited: 131. <https://doi.org/10.1016/j.joule.2019.09.014>
104. ③Beyond Ti₃C₂Tx: MXenes for Electromagnetic Interference Shielding. Han, M.K., Shuck, C.E., Rakhmanov, R. et al. Acs Nano, 14, (2020) 5008. Cited: 131. <https://doi.org/10.1021/acsnano.0c01312>
105. ⑤Recent progress on control strategies for inherent issues in friction stir welding. Meng, X.C., Huang, Y.X., Cao, J. et al. Progress in Materials Science, 115, (2021) 100706. Cited: 131. <https://doi.org/10.1016/j.pmatsci.2020.100706>

106. ③ Alveolus-Inspired Active Membrane Sensors for Self-Powered Wearable Chemical Sensing and Breath Analysis. Su, Y.J., Wang, J.J., Wang, B. et al. *Acs Nano*, 14, (2020) 6067. Cited: 130. <https://doi.org/10.1021/acsnano.0c01804>
107. ④ A review of mechanical properties of additively manufactured Inconel 718. Hosseini, E. and Popovich, V.A. *Additive Manufacturing*, 30, (2019) 100877. Cited: 129. <https://doi.org/10.1016/j.addma.2019.100877>
108. ④ Lead-free tin-halide perovskite solar cells with 13% efficiency. Nishimura, K., Kamarudin, M.A., Hirotani, D. et al. *Nano Energy*, 74, (2020) 104858. Cited: 129. <https://doi.org/10.1016/j.nanoen.2020.104858>
109. ⑤ A review on 2D MoS₂ cocatalysts in photocatalytic H-2 production. Liang, Z.Z., Shen, R.C., Ng, Y.H. et al. *Journal of Materials Science & Technology*, 56, (2020) 89. Cited: 128. <https://doi.org/10.1016/j.jmst.2020.04.032>
110. ④ Electrolysis of low-grade and saline surface water. Tong, W.M., Forster, M., Dionigi, F. et al. *Nature Energy*, 5, (2020) 367. Cited: 127. <https://doi.org/10.1038/s41560-020-0550-8>
111. Triboelectric Nanogenerator (TENG)-Sparking an Energy and Sensor Revolution. Wang, Z.L. *Advanced Energy Materials*, 10, (2020) 2000137. Cited: 127. <https://doi.org/10.1002/aenm.202000137>
112. ⑤ Understanding and applying coulombic efficiency in lithium metal batteries. Xiao, J., Li, Q.Y., Bi, Y.J. et al. *Nature Energy*, 5, (2020) 561. Cited: 127. <https://doi.org/10.1038/s41560-020-0648-z>
113. ③ Two-dimensional materials for next-generation computing technologies. Liu, C.S., Chen, H.W., Wang, S.Y. et al. *Nature Nanotechnology*, 15, (2020) 545. Cited: 125. <https://doi.org/10.1038/s41565-020-0724-3>
114. ③ Achieving Fast and Durable Lithium Storage through Amorphous FeP Nanoparticles Encapsulated in Ultrathin 3D P-Doped Porous Carbon Nanosheets. Zheng, Z.M., Wu, H.H., Liu, H.D. et al. *Acs Nano*, 14, (2020) 9545. Cited: 122. <https://doi.org/10.1021/acsnano.9b08575>
115. ② Design of low bandgap tin-lead halide perovskite solar cells to achieve thermal, atmospheric and operational stability. Prasanna, R., Leijtens, T., Dunfield, S.P. et al. *Nature Energy*, 4, (2019) 939. Cited: 121. <https://doi.org/10.1038/s41560-019-0471-6>
116. Synthetic alternatives to Matrigel. Aisenbrey, E.A. and Murphy, W.L. *Nature Reviews Materials*, 5, (2020) 539. Cited: 121. <https://doi.org/10.1038/s41578-020-0199-8>
117. Highly efficient luminescence from space-confined charge-transfer emitters. Tang, X., Cui, L.S., Li, H.C. et al. *Nature Materials*, 19, (2020) 1332. Cited: 121. <https://doi.org/10.1038/s41563-020-0710-z>

118. ③The success story of graphite as a lithium-ion anode material - fundamentals, remaining challenges, and recent developments including silicon (oxide) composites. Asenbauer, J., Eisenmann, T., Kuenzel, M. et al. Sustainable Energy & Fuels, 4, (2020) 5387. Cited: 121. <https://doi.org/10.1039/d0se00175a>
119. Emerging Applications of Elemental 2D Materials. Glavin, N.R., Rao, R., Varshney, V. et al. Advanced Materials, 32, (2020) 1904302. Cited: 120. <https://doi.org/10.1002/adma.201904302>
120. ③Additive manufacturing in construction: A review on processes, applications, and digital planning methods. Paolini, A., Kollmannsberger, S. and Rank, E. Additive Manufacturing, 30, (2019) 100894. Cited: 119. <https://doi.org/10.1016/j.addma.2019.100894>
121. ⑤Iron-based phosphides as electrocatalysts for the hydrogen evolution reaction: recent advances and future prospects. Xu, S.R., Zhao, H.T., Li, T.S. et al. Journal of Materials Chemistry A, 8, (2020) 19729. Cited: 118. <https://doi.org/10.1039/d0ta05628f>
122. Flat optics with dispersion-engineered metasurfaces. Chen, W.T., Zhu, A.D.Y. and Capasso, F. Nature Reviews Materials, 5, (2020) 604. Cited: 117. <https://doi.org/10.1038/s41578-020-0203-3>
123. ②Recent Progress on Polymer Materials for Additive Manufacturing. Tan, L.J.Y., Zhu, W. and Zhou, K. Advanced Functional Materials, 30, (2020) 2003062. Cited: 117. <https://doi.org/10.1002/adfm.202003062>
124. Strategies toward High-Loading Lithium-Sulfur Battery. Hu, Y., Chen, W., Lei, T.Y. et al. Advanced Energy Materials, 10, (2020) 2000082. Cited: 116. <https://doi.org/10.1002/aenm.202000082>
125. ⑤Controlling N-doping type in carbon to boost single-atom site Cu catalyzed transfer hydrogenation of quinoline. Zhang, J., Zheng, C.Y., Zhang, M.L. et al. Nano Research, 13, (2020) 3082. Cited: 116. <https://doi.org/10.1007/s12274-020-2977-4>
126. ③Electronic Metal-Support Interaction of Single-Atom Catalysts and Applications in Electrocatalysis. Yang, J.R., Li, W.H., Wang, D.S. et al. Advanced Materials, 32, (2020) 2003300. Cited: 116. <https://doi.org/10.1002/adma.202003300>
127. Effect of solid-H₂S gas reactions on CZTSSe thin film growth and photovoltaic properties of a 12.62% efficiency device. Son, D.H., Kim, S.H., Kim, S.Y. et al. Journal of Materials Chemistry A, 7, (2019) 25279. Cited: 115. <https://doi.org/10.1039/c9ta08310c>
128. ④Dendrites in Zn-Based Batteries. Yang, Q., Li, Q., Liu, Z.X. et al. Advanced Materials, 32, (2020) 2001854. Cited: 114. <https://doi.org/10.1002/adma.202001854>
129. Biodegradable Manganese-Doped Calcium Phosphate Nanotheranostics for Traceable Cascade Reaction-Enhanced Anti-Tumor Therapy. Fu, L.H., Hu, Y.R., Qi, C. et al. Acs Nano, 13, (2019) 13985. Cited: 112. <https://doi.org/10.1021/acsnano.9b05836>

130. ③Battery Lifetime Prognostics. Hu, X.S., Xu, L., Lin, X.K. et al. Joule, 4, (2020) 310. Cited: 112. <https://doi.org/10.1016/j.joule.2019.11.018>
131. ②Coexisting Single-Atomic Fe and Ni Sites on Hierarchically Ordered Porous Carbon as a Highly Efficient ORR Electrocatalyst. Zhu, Z.J., Yin, H.J., Wang, Y. et al. Advanced Materials, 32, (2020) 2004670. Cited: 112. <https://doi.org/10.1002/adma.202004670>
132. ③Lightweight, Flexible Cellulose-Derived Carbon Aerogel@Reduced Graphene Oxide/PDMS Composites with Outstanding EMI Shielding Performances and Excellent Thermal Conductivities. Song, P., Liu, B., Liang, C.B. et al. Nano-Micro Letters, 13, (2021) 91. Cited: 111. <https://doi.org/10.1007/s40820-021-00624-4>
133. ③Friction stir welding/processing of metals and alloys: A comprehensive review on microstructural evolution. Heidarzadeh, A., Mironov, S., Kaibyshev, R. et al. Progress in Materials Science, 117, (2021) 100752. Cited: 111. <https://doi.org/10.1016/j.pmatsci.2020.100752>
134. ④Hydrothermal deposition of antimony selenosulfide thin films enables solar cells with 10% efficiency. Tang, R.F., Wang, X.M., Lian, W.T. et al. Nature Energy, 5, (2020) 587. Cited: 110. <https://doi.org/10.1038/s41560-020-0652-3>
135. ⑤CCGPA-MPPT: Cauchy preferential crossover-based global pollination algorithm for MPPT in photovoltaic system. Sundararaj, V., Anoop, V., Dixit, P. et al. Progress in Photovoltaics, 28, (2020) 1128. Cited: 109. <https://doi.org/10.1002/pip.3315>
136. ⑤Electrolyte design for LiF-rich solid-electrolyte interfaces to enable high-performance microsized alloy anodes for batteries. Chen, J., Fan, X.L., Li, Q. et al. Nature Energy, 5, (2020) 386. Cited: 105. <https://doi.org/10.1038/s41560-020-0601-1>
137. ④Carbazole isomers induce ultralong organic phosphorescence. Chen, C.J., Chi, Z.G., Chong, K.C. et al. Nature Materials, 20, (2021) 175. Cited: 104. <https://doi.org/10.1038/s41563-020-0797-2>
138. ②A Layer-by-Layer Architecture for Printable Organic Solar Cells Overcoming the Scaling Lag of Module Efficiency. Sun, R., Wu, Q., Guo, J. et al. Joule, 4, (2020) 407. Cited: 103. <https://doi.org/10.1016/j.joule.2019.12.004>
139. ③Electrochemical reduction of nitrate to ammonia via direct eight-electron transfer using a copper-molecular solid catalyst. Chen, G.F., Yuan, Y.F., Jiang, H.F. et al. Nature Energy, 5, (2020) 605. Cited: 103. <https://doi.org/10.1038/s41560-020-0654-1>
140. Hollow Engineering to Co@N-Doped Carbon Nanocages via Synergistic Protecting-Etching Strategy for Ultrahigh Microwave Absorption. Liu, P.B., Gao, S., Zhang, G.Z. et al. Advanced Functional Materials, 31, (2021) 2102812. Cited: 103. <https://doi.org/10.1002/adfm.202102812>

141. Challenges and Key Parameters of Lithium-Sulfur Batteries on Pouch Cell Level. Dorfler, S., Althues, H., Hartel, P. et al. Joule, 4, (2020) 539. Cited: 102.
<https://doi.org/10.1016/j.joule.2020.02.006>
142. Bifunctional Heterostructured Transition Metal Phosphides for Efficient Electrochemical Water Splitting. Zhang, H.J., Maijenburg, A.W., Li, X.P. et al. Advanced Functional Materials, 30, (2020) 2003261. Cited: 102. <https://doi.org/10.1002/adfm.202003261>
143. Cellulose Nanofibrils Enhanced, Strong, Stretchable, Freezing-Tolerant Ionic Conductive Organohydrogel for Multi-Functional Sensors. Ye, Y.H., Zhang, Y.F., Chen, Y. et al. Advanced Functional Materials, 30, (2020) 2003430. Cited: 102.
<https://doi.org/10.1002/adfm.202003430>
144. ③Recent advances in g-C₃N₄-based heterojunction photocatalysts. Li, Y.F., Zhou, M.H., Cheng, B. et al. Journal of Materials Science & Technology, 56, (2020) 1. Cited: 102.
<https://doi.org/10.1016/j.jmst.2020.04.028>
145. ④COVID-19 Vaccine Frontrunners and Their Nanotechnology Design. Chung, Y.H., Beiss, V., Fiering, S.N. et al. Acs Nano, 14, (2020) 12522. Cited: 102.
<https://doi.org/10.1021/acsnano.0c07197>
146. Design Strategies for Development of TMD-Based Heterostructures in Electrochemical Energy Systems. Prabhu, P., Jose, V. and Lee, J.M. Matter, 2, (2020) 526. Cited: 100.
<https://doi.org/10.1016/j.matt.2020.01.001>
147. ③Molecular engineering of dispersed nickel phthalocyanines on carbon nanotubes for selective CO₂ reduction. Zhang, X., Wang, Y., Gu, M. et al. Nature Energy, 5, (2020) 684. Cited: 100. <https://doi.org/10.1038/s41560-020-0667-9>
148. ③Fast conversion and controlled deposition of lithium (poly)sulfides in lithium-sulfur batteries using high-loading cobalt single atoms. Li, Y.J., Wu, J.B., Zhang, B. et al. Energy Storage Materials, 30, (2020) 250. Cited: 99. <https://doi.org/10.1016/j.ensm.2020.05.022>
149. Engineered biomaterials for in situ tissue regeneration. Gaharwar, A.K., Singh, I. and Khademhosseini, A. Nature Reviews Materials, 5, (2020) 686. Cited: 97.
<https://doi.org/10.1038/s41578-020-0209-x>
150. ③Hierarchical composite of biomass derived magnetic carbon framework and phytic acid doped polyaniline with prominent electromagnetic wave absorption capacity. Hou, T.Q., Jia, Z.R., Feng, A.L. et al. Journal of Materials Science & Technology, 68, (2021) 61. Cited: 97.
<https://doi.org/10.1016/j.jmst.2020.06.046>
151. ②Z-Scheme Photocatalytic Systems for Solar Water Splitting. Ng, B.J., Putri, L.K., Kong, X.Y. et al. Advanced Science, 7, (2020) 1903171. Cited: 96.
<https://doi.org/10.1002/advs.201903171>

152. ② Galvanic Replacement Reaction Involving Core-Shell Magnetic Chains and Orientation-Tunable Microwave Absorption Properties. Zhao, B., Li, Y., Zeng, Q.W. et al. *Small*, 16, (2020) 2003502. Cited: 96. <https://doi.org/10.1002/smll.202003502>
153. Highly quaternized polystyrene ionomers for high performance anion exchange membrane water electrolyzers. Li, D.G., Park, E.J., Zhu, W.L. et al. *Nature Energy*, 5, (2020) 378. Cited: 95. <https://doi.org/10.1038/s41560-020-0577-x>
154. ③ Highly selective electrocatalytic CO₂ reduction to ethanol by metallic clusters dynamically formed from atomically dispersed copper. Xu, H.P., Rebollar, D., He, H.Y. et al. *Nature Energy*, 5, (2020) 623. Cited: 95. <https://doi.org/10.1038/s41560-020-0666-x>
155. ③ Multifunctional Textiles/Metal-Organic Frameworks Composites for Efficient Ultraviolet Radiation Blocking and Noise Reduction. Zhang, K., Yang, Z., Mao, X. et al. *Acs Applied Materials & Interfaces*, 12, (2020) 55316. Cited: 92. <https://doi.org/10.1021/acsmami.0c18147>
156. ③ Rational Design of Two-Dimensional Transition Metal Carbide/Nitride (MXene) Hybrids and Nanocomposites for Catalytic Energy Storage and Conversion. Lim, K.R.G., Handoko, A.D., Nemanic, S.K. et al. *Acs Nano*, 14, (2020) 10834. Cited: 92.
<https://doi.org/10.1021/acsnano.0c05482>
157. ④ From intrinsic dielectric loss to geometry patterns: Dual-principles strategy for ultrabroad band microwave absorption. Quan, B., Gu, W.H., Sheng, J.Q. et al. *Nano Research*, 14, (2021) 1495. Cited: 91. <https://doi.org/10.1007/s12274-020-3208-8>
158. ④ Flexible, Transparent, and Conductive Ti₃C₂Tx MXene-Silver Nanowire Films with Smart Acoustic Sensitivity for High-Performance Electromagnetic Interference Shielding. Chen, W., Liu, L.X., Zhang, H.B. et al. *Acs Nano*, 14, (2020) 16643. Cited: 91.
<https://doi.org/10.1021/acsnano.0c01635>
159. ② Highly Selective CO₂ Capture and Its Direct Photochemical Conversion on Ordered 2D/1D Heterojunctions. Xia, Y., Tian, Z.H., Heil, T. et al. *Joule*, 3, (2019) 2792. Cited: 90.
<https://doi.org/10.1016/j.joule.2019.08.011>
160. Keyhole-induced porosities in Laser-based Powder Bed Fusion (L-PBF) of Ti6Al4V: High-fidelity modelling and experimental validation. Bayat, M., Thanki, A., Mohanty, S. et al. *Additive Manufacturing*, 30, (2019) 100835. Cited: 89.
<https://doi.org/10.1016/j.addma.2019.100835>
161. ② A high-energy and long-cycling lithium-sulfur pouch cell via a macroporous catalytic cathode with double-end binding sites. Zhao, C., Xu, G.L., Yu, Z. et al. *Nature Nanotechnology*, 16, (2021) 166. Cited: 89. <https://doi.org/10.1038/s41565-020-00797-w>
162. ② A holistic approach to interface stabilization for efficient perovskite solar modules with over 2,000-hour operational stability. Liu, Z.H., Qiu, L.B., Ono, L.K. et al. *Nature Energy*, 5, (2020) 596. Cited: 88. <https://doi.org/10.1038/s41560-020-0653-2>

163. ②Step-scheme CdS/TiO₂ nanocomposite hollow microsphere with enhanced photocatalytic CO₂ reduction activity. Wang, Z.L., Chen, Y.F., Zhang, L.Y. et al. Journal of Materials Science & Technology, 56, (2020) 143. Cited: 88. <https://doi.org/10.1016/j.jmst.2020.02.062>
164. A History and Perspective of Non-Fullerene Electron Acceptors for Organic Solar Cells. Armin, A., Li, W., Sandberg, O.J. et al. Advanced Energy Materials, 11, (2021) 2003570. Cited: 87. <https://doi.org/10.1002/aenm.202003570>
165. Organic Photodetectors and their Application in Large Area and Flexible Image Sensors: The Role of Dark Current. Simone, G., Dyson, M.J., Meskers, S.C.J. et al. Advanced Functional Materials, 30, (2020) 1904205. Cited: 86. <https://doi.org/10.1002/adfm.201904205>
166. ②The Fe Effect: A review unveiling the critical roles of Fe in enhancing OER activity of Ni and Co based catalysts. Anantharaj, S., Kundu, S. and Noda, S. Nano Energy, 80, (2021) 105514. Cited: 86. <https://doi.org/10.1016/j.nanoen.2020.105514>
167. ③Rapid, Ultrasensitive, and Quantitative Detection of SARS-CoV-2 Using Antisense Oligonucleotides Directed Electrochemical Biosensor Chip. Alafeef, M., Digne, K., Moitra, P. et al. Acs Nano, 14, (2020) 17028. Cited: 85. <https://doi.org/10.1021/acsnano.0c06392>
168. ②Conjugated Organic Cations Enable Efficient Self-Healing FASnI(3) Solar Cells. Ran, C.X., Gao, W.Y., Li, J.R. et al. Joule, 3, (2019) 3072. Cited: 84. <https://doi.org/10.1016/j.joule.2019.08.023>
169. Efficient Perovskite Solar Cell Modules with High Stability Enabled by Iodide Diffusion Barriers. Bi, E.B., Tang, W.T., Chen, H. et al. Joule, 3, (2019) 2748. Cited: 82. <https://doi.org/10.1016/j.joule.2019.07.030>
170. ②Two-dimensional Ruddlesden-Popper layered perovskite solar cells based on phase-pure thin films. Liang, C., Gu, H., Xia, Y.D. et al. Nature Energy, 6, (2021) 38. Cited: 82. <https://doi.org/10.1038/s41560-020-00721-5>
171. ③Solar cell efficiency tables (version 57). Green, M., Dunlop, E., Hohl-Ebinger, J. et al. Progress in Photovoltaics, 29, (2021) 3. Cited: 81. <https://doi.org/10.1002/pip.3371>
172. Flexible MXene/Silver Nanowire-Based Transparent Conductive Film with Electromagnetic Interference Shielding and Electro-Photo-Thermal Performance. Zhou, B., Su, M.J., Yang, D.Z. et al. Acs Applied Materials & Interfaces, 12, (2020) 40859. Cited: 80. <https://doi.org/10.1021/acsami.0c09020>
173. ②Heterostructured materials: superior properties from hetero-zone interaction. Zhu, Y.T., Ameyama, K., Anderson, P.M. et al. Materials Research Letters, 9, (2021) 1. Cited: 80. <https://doi.org/10.1080/21663831.2020.1796836>
174. ③Surface Engineering of Ambient-Air-Processed Cesium Lead Triiodide Layers for Efficient Solar Cells. Yoon, S.M., Min, H., Kim, J.B. et al. Joule, 5, (2021) 183. Cited: 80. <https://doi.org/10.1016/j.joule.2020.11.020>

175. Heterogeneous Bimetallic Phosphide Ni₂P-Fe₂P as an Efficient Bifunctional Catalyst for Water/Seawater Splitting. Wu, L.B., Yu, L., Zhang, F.H. et al. Advanced Functional Materials, 31, (2021) 2006484. Cited: 79. <https://doi.org/10.1002/adfm.202006484>
176. Boron-doped nitrogen-deficient carbon nitride-based Z-scheme heterostructures for photocatalytic overall water splitting. Zhao, D.M., Wang, Y.Q., Dong, C.L. et al. Nature Energy, 6, (2021) 388. Cited: 79. <https://doi.org/10.1038/s41560-021-00795-9>
177. Green hydrogen from anion exchange membrane water electrolysis: a review of recent developments in critical materials and operating conditions. Miller, H.A., Bouzek, K., Hnat, J. et al. Sustainable Energy & Fuels, 4, (2020) 2114. Cited: 78.
<https://doi.org/10.1039/c9se01240k>
178. Transformation-induced plasticity (TRIP) in advanced steels: A review. Soleimani, M., Kalhor, A. and Mirzadeh, H. Materials Science and Engineering a-Structural Materials Properties Microstructure and Processing, 795, (2020) 140023. Cited: 78.
<https://doi.org/10.1016/j.msea.2020.140023>
179. Modulation of Defects and Interfaces through Alkylammonium Interlayer for Efficient Inverted Perovskite Solar Cells. Wu, S.F., Zhang, J., Li, Z. et al. Joule, 4, (2020) 1248. Cited: 77. <https://doi.org/10.1016/j.joule.2020.04.001>
180. ③Diagnostics for SARS-CoV-2 infections. Kevadiya, B.D., Machhi, J., Herskovitz, J. et al. Nature Materials, 20, (2021) 593. Cited: 77. <https://doi.org/10.1038/s41563-020-00906-z>
181. ②Mechanistic models for additive manufacturing of metallic components. Wei, H.L., Mukherjee, T., Zhang, W. et al. Progress in Materials Science, 116, (2021) 100703. Cited: 76.
<https://doi.org/10.1016/j.pmatsci.2020.100703>
182. ③Review on the electromagnetic interference shielding properties of carbon based materials and their novel composites: Recent progress, challenges and prospects. Wu, N.N., Hu, Q., Wei, R.B. et al. Carbon, 176, (2021) 88. Cited: 76.
<https://doi.org/10.1016/j.carbon.2021.01.124>
183. ②Ultrahigh power and energy density in partially ordered lithium-ion cathode materials. Ji, H.W., Wu, J.P., Cai, Z.J. et al. Nature Energy, 5, (2020) 213. Cited: 75.
<https://doi.org/10.1038/s41560-020-0573-1>
184. ②Reactive Oxygen Species-Related Nanoparticle Toxicity in the Biomedical Field. Yu, Z.J., Li, Q., Wang, J. et al. Nanoscale Research Letters, 15, (2020) 115. Cited: 75.
<https://doi.org/10.1186/s11671-020-03344-7>
185. ②Low-temperature and high-rate-charging lithium metal batteries enabled by an electrochemically active monolayer-regulated interface. Gao, Y., Rojas, T., Wang, K. et al. Nature Energy, 5, (2020) 534. Cited: 75. <https://doi.org/10.1038/s41560-020-0640-7>

186. Anodic Oxidation Strategy toward Structure-Optimized V₂O₃ Cathode via Electrolyte Regulation for Zn-Ion Storage. Luo, H., Wang, B., Wang, F. et al. *Acs Nano*, 14, (2020) 7328. Cited: 75. <https://doi.org/10.1021/acsnano.0c02658>
187. ② Strategies for the Stabilization of Zn Metal Anodes for Zn-Ion Batteries. Yi, Z.H., Chen, G.Y., Hou, F. et al. *Advanced Energy Materials*, 11, (2021) 2003065. Cited: 75. <https://doi.org/10.1002/aenm.202003065>
188. ② Low-Dimensional Metal Halide Perovskite Photodetectors. Wang, H.P., Li, S.Y., Liu, X.Y. et al. *Advanced Materials*, 33, (2021) 2003309. Cited: 75. <https://doi.org/10.1002/adma.202003309>
189. ③ Recent progress of chemodynamic therapy-induced combination cancer therapy. Wang, X.W., Zhong, X.Y., Liu, Z. et al. *Nano Today*, 35, (2020) 100946. Cited: 75. <https://doi.org/10.1016/j.nantod.2020.100946>
190. MOFs derived magnetic porous carbon microspheres constructed by core-shell Ni@C with high-performance microwave absorption. Gao, S., Zhang, G.Z., Wang, Y. et al. *Journal of Materials Science & Technology*, 88, (2021) 56. Cited: 75. <https://doi.org/10.1016/j.jmst.2021.02.011>
191. A review on graphitic carbon nitride (g-C₃N₄) based nanocomposites: Synthesis, categories, and their application in photocatalysis. Ismael, M. *Journal of Alloys and Compounds*, 846, (2020) 156446. Cited: 73. <https://doi.org/10.1016/j.jallcom.2020.156446>
192. Mechanical properties and deformation mechanisms of gradient nanostructured metals and alloys. Li, X.Y., Lu, L., Li, J.G. et al. *Nature Reviews Materials*, 5, (2020) 706. Cited: 72. <https://doi.org/10.1038/s41578-020-0212-2>
193. ③ Intact 2D/3D halide junction perovskite solar cells via solid-phase in-plane growth. Jang, Y.W., Lee, S., Yeom, K.M. et al. *Nature Energy*, 6, (2021) 63. Cited: 72. <https://doi.org/10.1038/s41560-020-00749-7>
194. ② First-cycle voltage hysteresis in Li-rich 3d cathodes associated with molecular O(2) trapped in the bulk. House, R.A., Rees, G.J., Perez-Osorio, M.A. et al. *Nature Energy*, 5, (2020) 777. Cited: 71. <https://doi.org/10.1038/s41560-020-00697-2>
195. ③ Broadband polarization-insensitive and wide-angle solar energy absorber based on tungsten ring-disc array. Yi, Z., Li, J.K., Lin, J.C. et al. *Nanoscale*, 12, (2020) 23077. Cited: 71. <https://doi.org/10.1039/d0nr04502k>
196. ② Inorganic Colloidal Electrolyte for Highly Robust Zinc-Ion Batteries. Gao, J.W., Xie, X.S., Liang, S.Q. et al. *Nano-Micro Letters*, 13, (2021) 69. Cited: 71. <https://doi.org/10.1007/s40820-021-00595-6>

197. An Inorganic/Organic S-Scheme Heterojunction H₂-Production Photocatalyst and its Charge Transfer Mechanism. Cheng, C., He, B.W., Fan, J.J. et al. Advanced Materials, 33, (2021) 2100317. Cited: 71. <https://doi.org/10.1002/adma.202100317>
198. Metal-free heteroatom-doped carbon-based catalysts for ORR: A critical assessment about the role of heteroatoms. Quilez-Bermejo, J., Morallon, E. and Cazorla-Amoros, D. Carbon, 165, (2020) 434. Cited: 70. <https://doi.org/10.1016/j.carbon.2020.04.068>
199. ②Poly(N-isopropylacrylamide)-based smart hydrogels: Design, properties and applications. Tang, L., Wang, L., Yang, X. et al. Progress in Materials Science, 115, (2021) 100702. Cited: 69. <https://doi.org/10.1016/j.pmatsci.2020.100702>
200. ②Photoluminescent and Chromic Nanomaterials for Anticounterfeiting Technologies: Recent Advances and Future Challenges. Abdollahi, A., Roghani-Mamaqani, H., Razavi, B. et al. Acs Nano, 14, (2020) 14417. Cited: 69. <https://doi.org/10.1021/acsnano.0c07289>
201. ②Graphene Quantum Dots and Their Applications in Bioimaging, Biosensing, and Therapy. Chung, S., Revia, R.A. and Zhang, M.Q. Advanced Materials, 33, (2021) 1904362. Cited: 68. <https://doi.org/10.1002/adma.201904362>
202. ②Metal-Organic Frameworks Derived Functional Materials for Electrochemical Energy Storage and Conversion: A Mini Review. Lu, X.F., Fang, Y.J., Luan, D.Y. et al. Nano Letters, 21, (2021) 1555. Cited: 66. <https://doi.org/10.1021/acs.nanolett.0c04898>
203. ③Binder jet 3D printing?Process parameters, materials, properties, modeling, and challenges*. Mostafaei, A., Elliott, A.M., Barnes, J.E. et al. Progress in Materials Science, 119, (2021) 100707. Cited: 66. <https://doi.org/10.1016/j.pmatsci.2020.100707>
204. State of the Art and Prospects for Halide Perovskite Nanocrystals. Dey, A., Ye, J.Z., De, A. et al. Acs Nano, 15, (2021) 10775. Cited: 66. <https://doi.org/10.1021/acsnano.0c08903>
205. The role of exciton lifetime for charge generation in organic solar cells at negligible energy-level offsets. Classen, A., Chochos, C.L., Luer, L. et al. Nature Energy, 5, (2020) 711. Cited: 65. <https://doi.org/10.1038/s41560-020-00684-7>
206. Scalable and hierarchically designed polymer film as a selective thermal emitter for high-performance all-day radiative cooling. Li, D., Liu, X., Li, W. et al. Nature Nanotechnology, 16, (2021) 153. Cited: 65. <https://doi.org/10.1038/s41565-020-00800-4>
207. Dual-Dynamic-Bond Cross-Linked Antibacterial Adhesive Hydrogel Sealants with On-Demand Removability for Post-Wound-Closure and Infected Wound Healing. Liang, Y.Q., Li, Z.L., Huang, Y. et al. Acs Nano, 15, (2021) 7078. Cited: 64. <https://doi.org/10.1021/acsnano.1c00204>
208. Effect of self-doped heteroatoms on the performance of biomass-derived carbon for supercapacitor applications. Gopalakrishnan, A. and Badhulika, S. Journal of Power Sources, 480, (2020) 228830. Cited: 63. <https://doi.org/10.1016/j.jpowsour.2020.228830>

209. ④ Intrinsic high thermal conductive liquid crystal epoxy film simultaneously combining with excellent intrinsic self-healing performance. Yang, X.T., Zhong, X., Zhang, J.L. et al. Journal of Materials Science & Technology, 68, (2021) 209. Cited: 63.
<https://doi.org/10.1016/j.jmst.2020.08.027>
210. Co-Induced Electronic Optimization of Hierarchical NiFe LDH for Oxygen Evolution. Lin, Y.P., Wang, H., Peng, C.K. et al. Small, 16, (2020) 2002426. Cited: 62.
<https://doi.org/10.1002/smll.202002426>
211. Intrinsic efficiency limits in low-bandgap non-fullerene acceptor organic solar cells. Karuthedath, S., Gorenflo, J., Firdaus, Y. et al. Nature Materials, 20, (2021) 378. Cited: 62.
<https://doi.org/10.1038/s41563-020-00835-x>
212. ② Multi-shell hollow porous carbon nanoparticles with excellent microwave absorption properties. Tao, J.Q., Zhou, J.T., Yao, Z.J. et al. Carbon, 172, (2021) 542. Cited: 62.
<https://doi.org/10.1016/j.carbon.2020.10.062>
213. ③ 16% efficiency all-polymer organic solar cells enabled by a finely tuned morphology via the design of ternary blend. Liu, T., Yang, T., Ma, R.J. et al. Joule, 5, (2021) 914. Cited: 61.
<https://doi.org/10.1016/j.joule.2021.02.002>
214. ② Improvement of thermal conductivities and simulation model for glass fabrics reinforced epoxy laminated composites via introducing hetero-structured BNN-30@BNNS fillers. Shi, X.T., Zhang, R.H., Ruan, K.P. et al. Journal of Materials Science & Technology, 82, (2021) 239. Cited: 61. <https://doi.org/10.1016/j.jmst.2021.01.018>
215. Stereolithography (SLA) 3D printing of an antihypertensive polyprintlet: Case study of an unexpected photopolymer-drug reaction. Xu, X.Y., Robles-Martinez, P., Madla, C.M. et al. Additive Manufacturing, 33, (2020) 101071. Cited: 60.
<https://doi.org/10.1016/j.addma.2020.101071>
216. Atomic-Level Charge Separation Strategies in Semiconductor-Based Photocatalysts. Chen, F., Ma, T.Y., Zhang, T.R. et al. Advanced Materials, 33, (2021) 2005256. Cited: 60.
<https://doi.org/10.1002/adma.202005256>
217. ② Environmentally Friendly and Multifunctional Shaddock Peel-Based Carbon Aerogel for Thermal-Insulation and Microwave Absorption. Gu, W.H., Sheng, J.Q., Huang, Q.Q. et al. Nano-Micro Letters, 13, (2021) 102. Cited: 59. <https://doi.org/10.1007/s40820-021-00635-1>
218. 2D metal-organic framework for stable perovskite solar cells with minimized lead leakage. Wu, S.F., Li, Z., Li, M.Q. et al. Nature Nanotechnology, 15, (2020) 934. Cited: 58.
<https://doi.org/10.1038/s41565-020-0765-7>
219. Mechanical performances and microstructures of metakaolin contained UHPC matrix under steam curing conditions. Mo, Z.Y., Gao, X.J. and Su, A.S. Construction and Building Materials, 268, (2021) 121112. Cited: 58. <https://doi.org/10.1016/j.conbuildmat.2020.121112>

220. The role of adsorbed hydroxide in hydrogen evolution reaction kinetics on modified platinum. McCrum, I.T. and Koper, M.T.M. *Nature Energy*, 5, (2020) 891. Cited: 56. <https://doi.org/10.1038/s41560-020-00710-8>
221. ② Soliton solutions to the Boussinesq equation through sine-Gordon method and Kudryashov method. Akbar, M.A., Akinyemi, L., Yao, S.W. et al. *Results in Physics*, 25, (2021) 104228. Cited: 56. <https://doi.org/10.1016/j.rinp.2021.104228>
222. ② Facile Synthesis of Copper(I) Oxide Nanochains and the Photo-Thermal Conversion Performance of Its Nanofluids. Ni, Z.J., Cao, X.H., Wang, X.Y. et al. *Coatings*, 11, (2021) 749. Cited: 56. <https://doi.org/10.3390/coatings11070749>
223. Industrial solid waste for heavy metals adsorption features and challenges a review. Soliman, N.K. and Moustafa, A.F. *Journal of Materials Research and Technology-Jmr&T*, 9, (2020) 10235. Cited: 54. <https://doi.org/10.1016/j.jmrt.2020.07.045>
224. ③ Cobalt single atom site catalysts with ultrahigh metal loading for enhanced aerobic oxidation of ethylbenzene. Xiong, Y., Sun, W.M., Han, Y.H. et al. *Nano Research*, 14, (2021) 2418. Cited: 54. <https://doi.org/10.1007/s12274-020-3244-4>
225. ② Over 17% Efficiency Binary Organic Solar Cells with Photoresponses Reaching 1000 nm Enabled by Selenophene-Fused Nonfullerene Acceptors. Qi, F., Jiang, K., Lin, F. et al. *Acs Energy Letters*, 6, (2021) 9. Cited: 54. <https://doi.org/10.1021/acsenergylett.0c02230>
226. ③ A theoretical strategy of pure carbon materials for lightweight and excellent absorption performance. Yan, X., Huang, X.X., Chen, Y.T. et al. *Carbon*, 174, (2021) 662. Cited: 54. <https://doi.org/10.1016/j.carbon.2020.11.044>
227. Electrolyte Strategies toward Better Zinc-Ion Batteries. Liu, C.X., Xie, X.S., Lu, B.G. et al. *Acs Energy Letters*, 6, (2021) 1015. Cited: 54. <https://doi.org/10.1021/acsenergylett.0c02684>
228. Organic Solar Cells with 18% Efficiency Enabled by an Alloy Acceptor: A Two-in-One Strategy. Liu, F., Zhou, L., Liu, W.R. et al. *Advanced Materials*, 33, (2021) 2100830. Cited: 54. <https://doi.org/10.1002/adma.202100830>
229. Atomically Dispersed Cobalt Trifunctional Electrocatalysts with Tailored Coordination Environment for Flexible Rechargeable Zn-Air Battery and Self-Driven Water Splitting. Zhang, Z.Y., Zhao, X.X., Xi, S.B. et al. *Advanced Energy Materials*, 10, (2020) 2002896. Cited: 52. <https://doi.org/10.1002/aenm.202002896>
230. ③ Study on self-healing and corrosion resistance behaviors of functionalized carbon dot-intercalated graphene-based waterborne epoxy coating. Ye, Y.W., Chen, H., Zou, Y.J. et al. *Journal of Materials Science & Technology*, 67, (2021) 226. Cited: 52. <https://doi.org/10.1016/j.jmst.2020.06.023>

231. ② Heterostructure design of Fe₃N alloy/porous carbon nanosheet composites for efficient microwave attenuation. Gu, W.H., Cui, X.Q., Zheng, J. et al. *Journal of Materials Science & Technology*, 67, (2021) 265. Cited: 52. <https://doi.org/10.1016/j.jmst.2020.06.054>
232. ② Unconventional chiral charge order in kagome superconductor KV₃Sb₅. Jiang, Y.X., Yin, J.X., Denner, M.M. et al. *Nature Materials*, 20, (2021) 1353. Cited: 52. <https://doi.org/10.1038/s41563-021-01034-y>
233. Lipid nanoparticles for mRNA delivery. Hou, X.C., Zaks, T., Langer, R. et al. *Nature Reviews Materials*, 6, (2021) 1078. Cited: 52. <https://doi.org/10.1038/s41578-021-00358-0>
234. Thermoelectric cooling materials. Mao, J., Chen, G. and Ren, Z.F. *Nature Materials*, 20, (2021) 454. Cited: 51. <https://doi.org/10.1038/s41563-020-00852-w>
235. Post-lithium-ion battery cell production and its compatibility with lithium-ion cell production infrastructure. Duffner, F., Kronemeyer, N., Tubke, J. et al. *Nature Energy*, 6, (2021) 123. Cited: 51. <https://doi.org/10.1038/s41560-020-00748-8>
236. Organic Solar Cells-The Path to Commercial Success. Riede, M., Spoltore, D. and Leo, K. *Advanced Energy Materials*, 11, (2021) 2002653. Cited: 50. <https://doi.org/10.1002/aenm.202002653>
237. Recent advance and prospectives of electrocatalysts based on transition metal selenides for efficient water splitting. Peng, X., Yan, Y.J., Jin, X. et al. *Nano Energy*, 78, (2020) 105234. Cited: 50. <https://doi.org/10.1016/j.nanoen.2020.105234>
238. Improved synergistic effect for achieving ultrathin microwave absorber of 1D Co nanochains/2D carbide MXene nanocomposite. Pan, F., Yu, L.Z., Xiang, Z. et al. *Carbon*, 172, (2021) 506. Cited: 50. <https://doi.org/10.1016/j.carbon.2020.10.039>
239. Liquid Thermo-Responsive Smart Window Derived from Hydrogel. Zhou, Y., Wang, S.C., Peng, J.Q. et al. *Joule*, 4, (2020) 2458. Cited: 49. <https://doi.org/10.1016/j.joule.2020.09.001>
240. Controllable synthesis of Ni/NiO@porous carbon hybrid composites towards remarkable electromagnetic wave absorption and wide absorption bandwidth. Zhou, X.F., Jia, Z.R., Zhang, X.X. et al. *Journal of Materials Science & Technology*, 87, (2021) 120. Cited: 49. <https://doi.org/10.1016/j.jmst.2021.01.073>
241. Controllable synthesis of mesoporous carbon hollow microsphere twined by CNT for enhanced microwave absorption performance. Li, M.H., Fan, X.M., Xu, H.L. et al. *Journal of Materials Science & Technology*, 59, (2020) 164. Cited: 48. <https://doi.org/10.1016/j.jmst.2020.04.048>
242. ③ The influence of fiber type and length on the cracking resistance, durability and pore structure of face slab concrete. Wang, L., He, T.S., Zhou, Y.X. et al. *Construction and Building Materials*, 282, (2021) 122706. Cited: 48. <https://doi.org/10.1016/j.conbuildmat.2021.122706>

243. ②CRISPR-Cas12a-driven MXene-PEDOT:PSS piezoresistive wireless biosensor. Zeng, R.J., Wang, W.J., Chen, M.M. et al. *Nano Energy*, 82, (2021) 105711. Cited: 47.
<https://doi.org/10.1016/j.nanoen.2020.105711>
244. Architected cellular materials: A review on their mechanical properties towards fatigue-tolerant design and fabrication. Benedetti, M., du Plessis, A., Ritchie, R.O. et al. *Materials Science & Engineering R-Reports*, 144, (2021) 100606. Cited: 46.
<https://doi.org/10.1016/j.mser.2021.100606>
245. Cluster-Based Multifunctional Copper(II) Organic Framework as a Photocatalyst in the Degradation of Organic Dye and as an Electrocatalyst for Overall Water Splitting. Wang, F., Tian, F.K., Deng, Y.X. et al. *Crystal Growth & Design*, 21, (2021) 4242. Cited: 46.
<https://doi.org/10.1021/acs.cgd.1c00479>
246. Achieving over 17% efficiency of ternary all-polymer solar cells with two well-compatible polymer acceptors. Sun, R., Wang, W., Yu, H. et al. *Joule*, 5, (2021) 1548. Cited: 45.
<https://doi.org/10.1016/j.joule.2021.04.007>
247. Multifunctional HDPE/CNTs/PW composite phase change materials with excellent thermal and electrical conductivities. Li, X.L., Sheng, X.X., Guo, Y.Q. et al. *Journal of Materials Science & Technology*, 86, (2021) 171. Cited: 45. <https://doi.org/10.1016/j.jmst.2021.02.009>
248. Fabrication, mechanisms and perspectives of conductive polymer composites with multiple interfaces for electromagnetic interference shielding: A review. Wang, M., Tang, X.H., Cai, J.H. et al. *Carbon*, 177, (2021) 377. Cited: 44. <https://doi.org/10.1016/j.carbon.2021.02.047>
249. High-power Mg batteries enabled by heterogeneous enolization redox chemistry and weakly coordinating electrolytes. Dong, H., Tutasaus, O., Liang, Y.L. et al. *Nature Energy*, 5, (2020) 1043. Cited: 43. <https://doi.org/10.1038/s41560-020-00734-0>
250. A Well-Mixed Phase Formed by Two Compatible Non-Fullerene Acceptors Enables Ternary Organic Solar Cells with Efficiency over 18.6%. Cai, Y.H., Li, Y., Wang, R. et al. *Advanced Materials*, 33, (2021) 2101733. Cited: 43. <https://doi.org/10.1002/adma.202101733>
251. Low-Bandgap Non-fullerene Acceptors Enabling High-Performance Organic Solar Cells. Liu, W., Xu, X., Yuan, J. et al. *Acs Energy Letters*, 6, (2021) 598. Cited: 42.
<https://doi.org/10.1021/acsenergylett.0c02384>
252. Pt Single Atoms Supported on N-Doped Mesoporous Hollow Carbon Spheres with Enhanced Electrocatalytic H₂-Evolution Activity. Kuang, P.Y., Wang, Y.R., Zhu, B.C. et al. *Advanced Materials*, 33, (2021) 2008599. Cited: 42. <https://doi.org/10.1002/adma.202008599>
253. A Universal Strategy for the Preparation of Dual Superlyophobic Surfaces in Oil-Water Systems. Wu, M.M., Shi, G.G., Liu, W.M. et al. *Acs Applied Materials & Interfaces*, 13, (2021) 14759. Cited: 41. <https://doi.org/10.1021/acsami.1c02187>

254. ②Evaluation of pore size distribution and permeability reduction behavior in pervious concrete. Huang, J.D., Zhang, Y., Sun, Y.T. et al. Construction and Building Materials, 290, (2021) 123228. Cited: 41. <https://doi.org/10.1016/j.conbuildmat.2021.123228>
255. Reduced non-radiative charge recombination enables organic photovoltaic cell approaching 19% efficiency. Bi, P.Q., Zhang, S.Q., Chen, Z.H. et al. Joule, 5, (2021) 2408. Cited: 41. <https://doi.org/10.1016/j.joule.2021.06.020>
256. ②Zn-ion hybrid supercapacitors: Achievements, challenges and future perspectives. Wang, H.Y., Ye, W.Q., Yang, Y. et al. Nano Energy, 85, (2021) 105942. Cited: 40. <https://doi.org/10.1016/j.nanoen.2021.105942>
257. Highly Efficient Room-Temperature Phosphorescence Based on Single-Benzene Structure Molecules and Photoactivated Luminescence with Afterglow. Ma, L.W., Sun, S.Y., Ding, B.B. et al. Advanced Functional Materials, 31, (2021) 2010659. Cited: 39. <https://doi.org/10.1002/adfm.202010659>
258. ②Cost-effective iron-based aqueous redox flow batteries for large-scale energy storage application: A review. Zhang, H. and Sun, C.Y. Journal of Power Sources, 493, (2021) 229445. Cited: 39. <https://doi.org/10.1016/j.jpowsour.2020.229445>
259. Fluorinated interphase enables reversible aqueous zinc battery chemistries. Cao, L.S., Li, D., Pollard, T. et al. Nature Nanotechnology, 16, (2021) 902. Cited: 37. <https://doi.org/10.1038/s41565-021-00905-4>
260. Higher-order non-Hermitian skin effect. Kawabata, K., Sato, M. and Shiozaki, K. Physical Review B, 102, (2020) 205118. Cited: 36. <https://doi.org/10.1103/PhysRevB.102.205118>
261. ②Influence of noble metals on the electronic and optical properties of the monoclinic ZrO₂: A first-principles study. Pan, Y. and Zhang, J. Vacuum, 187, (2021) 110112. Cited: 36. <https://doi.org/10.1016/j.vacuum.2021.110112>
262. A review of niobium oxides based nanocomposites for lithium-ion batteries, sodium-ion batteries and supercapacitors. Yi, T.F., Sari, H.M.K., Li, X.Z. et al. Nano Energy, 85, (2021) 105955. Cited: 36. <https://doi.org/10.1016/j.nanoen.2021.105955>
263. Breaking Through Bottlenecks for Thermally Conductive Polymer Composites: A Perspective for Intrinsic Thermal Conductivity, Interfacial Thermal Resistance and Theoretics. Gu, J.W. and Ruan, K.P. Nano-Micro Letters, 13, (2021) 110. Cited: 35. <https://doi.org/10.1007/s40820-021-00640-4>
264. Advanced research trends in dye-sensitized solar cells. Kokkonen, M., Talebi, P., Zhou, J. et al. Journal of Materials Chemistry A, 9, (2021) 10527. Cited: 34. <https://doi.org/10.1039/d1ta00690h>

265. ②Concurrence of anomalous Hall effect and charge density wave in a superconducting topological kagome metal. Yu, F.H., Wu, T., Wang, Z.Y. et al. Physical Review B, 104, (2021) L041103. Cited: 34. <https://doi.org/10.1103/PhysRevB.104.L041103>
266. Recent advances in using nanofluids in renewable energy systems and the environmental implications of their uptake. Mahian, O., Bellos, E., Markides, C.N. et al. Nano Energy, 86, (2021) 106069. Cited: 33. <https://doi.org/10.1016/j.nanoen.2021.106069>
267. Self-Powered MXene/GaN van der Waals Heterojunction Ultraviolet Photodiodes with Superhigh Efficiency and Stable Current Outputs. Song, W.D., Chen, J.X., Li, Z.L. et al. Advanced Materials, 33, (2021) 2101059. Cited: 32. <https://doi.org/10.1002/adma.202101059>
268. ②A robust strategy of solvent choice to synthesize optimal nanostructured carbon for efficient energy storage. Song, Z.Y., Miao, L., Li, L.C. et al. Carbon, 180, (2021) 135. Cited: 31. <https://doi.org/10.1016/j.carbon.2021.04.078>
269. Defect compensation in formamidinium-caesium perovskites for highly efficient solar mini-modules with improved photostability. Deng, Y.H., Xu, S., Chen, S.S. et al. Nature Energy, 6, (2021) 633. Cited: 30. <https://doi.org/10.1038/s41560-021-00831-8>
270. Electrostatic self-assembly construction of 2D MoS₂ wrapped hollow Fe₃O₄ nanoflowers@1D carbon tube hybrids for self-cleaning highperformance microwave absorbers. Zhang, X., Dong, Y.Y., Pan, F. et al. Carbon, 177, (2021) 332. Cited: 29. <https://doi.org/10.1016/j.carbon.2021.02.092>
271. A novel Bi₂S₃/KTa_{0.75}Nb_{0.25}O₃ nanocomposite with high efficiency for photocatalytic and piezocatalytic N-2 fixation. Chen, L., Dai, X.Q., Li, X.J. et al. Journal of Materials Chemistry A, 9, (2021) 13344. Cited: 29. <https://doi.org/10.1039/d1ta02270a>
272. ②Recent progress in covalent organic frameworks as light-emitting materials. Xu, S. and Zhang, Q. Materials Today Energy, 20, (2021) 100635. Cited: 29. <https://doi.org/10.1016/j.mtener.2020.100635>
273. Bioinspired, Highly Adhesive, Nanostructured Polymeric Coatings for Superhydrophobic Fire-Extinguishing Thermal Insulation Foam. Ma, Z.W., Liu, X.C., Xu, X.D. et al. Acs Nano, 15, (2021) 11667. Cited: 28. <https://doi.org/10.1021/acsnano.1c02254>
274. Flexible Sandwich-Structured Electromagnetic Interference Shielding Nanocomposite Films with Excellent Thermal Conductivities. Zhang, Y.L., Ruan, K.P. and Gu, J.W. Small, 17, (2021) 2101951. Cited: 27. <https://doi.org/10.1002/smll.202101951>
275. ②Exploration of a novel depressant polyepoxysuccinic acid for the flotation separation of pentlandite from lizardite slimes. Liu, C., Zheng, Y.F., Yang, S.Y. et al. Applied Clay Science, 202, (2021) 105939. Cited: 26. <https://doi.org/10.1016/j.clay.2020.105939>

276. In-situ formation of low-dimensional, magnetic core-shell nanocrystal for electromagnetic dissipation. Lou, Z.C., Wang, Q.Y., Zhang, Y. et al. Composites Part B-Engineering, 214, (2021) 108744. Cited: 26. <https://doi.org/10.1016/j.compositesb.2021.108744>
277. Solitary waves travelling along an unsmooth boundary. He, J.H., Qie, N. and He, C.H. Results in Physics, 24, (2021) 104104. Cited: 26. <https://doi.org/10.1016/j.rinp.2021.104104>
278. Embedding Fe₂P nanocrystals in bayberry-like N, P-enriched carbon nanospheres as excellent oxygen reduction electrocatalyst for zinc-air battery. Wang, R.X., Yuan, Y.L., Zhang, J.B. et al. Journal of Power Sources, 501, (2021) 230006. Cited: 26. <https://doi.org/10.1016/j.jpowsour.2021.230006>
279. Fundamental and solutions of microcrack in Ni-rich layered oxide cathode materials of lithium-ion batteries. Yin, S.Y., Deng, W.T., Chen, J. et al. Nano Energy, 83, (2021) 105854. Cited: 25. <https://doi.org/10.1016/j.nanoen.2021.105854>
280. Effect of oxygen vacancy and A-site-deficiency on the dielectric performance of BNT-BT-BST relaxors. Liu, X., Rao, R.R., Shi, J. et al. Journal of Alloys and Compounds, 875, (2021) 159999. Cited: 25. <https://doi.org/10.1016/j.jallcom.2021.159999>
281. Hierarchical molecular design of high-performance nonlinear Ag₂HgI₄ material by defect engineering strategy. Yang, C., Liu, X., Teng, C. et al. Materials Today Physics, 19, (2021) 100432. Cited: 25. <https://doi.org/10.1016/j.mtphys.2021.100432>
282. A hydrolytically stable amino-functionalized Zinc(II) metal-organic framework containing nanocages for selective gas adsorption and luminescent sensing. Fan, L.M., Zhao, D.S., Zhang, H.H. et al. Microporous and Mesoporous Materials, 326, (2021) 111396. Cited: 25. <https://doi.org/10.1016/j.micromeso.2021.111396>
283. Lightweight graphene aerogels by decoration of 1D CoNi chains and CNTs to achieve ultra-wide microwave absorption. Zhao, B., Li, Y., Ji, H.Y. et al. Carbon, 176, (2021) 411. Cited: 24. <https://doi.org/10.1016/j.carbon.2021.01.136>
284. Electromagnetic absorption of copper fiber oriented composite using 3D printing. Sun, J.B., Aslani, F., Wei, J.J. et al. Construction and Building Materials, 300, (2021) 124026. Cited: 24. <https://doi.org/10.1016/j.conbuildmat.2021.124026>
285. Self-assembled MoS₂/3D worm-like expanded graphite hybrids for high-efficiency microwave absorption. Liu, Z.C., Pan, F., Deng, B.W. et al. Carbon, 174, (2021) 59. Cited: 23. <https://doi.org/10.1016/j.carbon.2020.12.019>
286. A review on carbon/magnetic metal composites for microwave absorption. Wang, B.L., Wu, Q., Fu, Y.G. et al. Journal of Materials Science & Technology, 86, (2021) 91. Cited: 22. <https://doi.org/10.1016/j.jmst.2020.12.078>

287. Recent advances on environmental corrosion behavior and mechanism of high-entropy alloys. Fu, Y., Li, J., Luo, H. et al. *Journal of Materials Science & Technology*, 80, (2021) 217. Cited: 21. <https://doi.org/10.1016/j.jmst.2020.11.044>
288. Structural and electronic properties of medium-sized beryllium doped magnesium BeMgn clusters and their anions. Zhao, Y.R., Xu, Y.Q., Chen, P. et al. *Results in Physics*, 26, (2021) 104341. Cited: 21. <https://doi.org/10.1016/j.rinp.2021.104341>
289. Thermal expansion optimization in solar aircraft using tangent hyperbolic hybrid nanofluid: a solar thermal application. Jamshed, W., Nisar, K.S., Ibrahim, R.W. et al. *Journal of Materials Research and Technology-Jmr&T*, 14, (2021) 985. Cited: 21. <https://doi.org/10.1016/j.jmrt.2021.06.031>
290. Controllable thermal conductivity in composites by constructing thermal conduction networks. Guo, Y.Q., Ruan, K.P. and Gu, J.W. *Materials Today Physics*, 20, (2021) 100449. Cited: 21. <https://doi.org/10.1016/j.mtphys.2021.100449>
291. Piezocatalytic degradation of methylene blue, tetrabromobisphenol A and tetracycline hydrochloride using Bi₄Ti₃O₁₂ with different morphologies. Cheng, T.T., Gao, W.H., Gao, H.J. et al. *Materials Research Bulletin*, 141, (2021) 111350. Cited: 20. <https://doi.org/10.1016/j.materresbull.2021.111350>
292. Self-organized error correction in random unitary circuits with measurement. Fan, R.H., Vijay, S., Vishwanath, A. et al. *Physical Review B*, 103, (2021) 174309. Cited: 18. <https://doi.org/10.1103/PhysRevB.103.174309>
293. Liquid crystal epoxy resins with high intrinsic thermal conductivities and their composites: A mini-review. Ruan, K.P., Zhong, X., Shi, X.T. et al. *Materials Today Physics*, 20, (2021) 100456. Cited: 18. <https://doi.org/10.1016/j.mtphys.2021.100456>
294. The improvement of freezing-thawing resistance of concrete by cellulose/polyvinyl alcohol hydrogel. Wu, K., Han, H., Xu, L.L. et al. *Construction and Building Materials*, 291, (2021) 123274. Cited: 17. <https://doi.org/10.1016/j.conbuildmat.2021.123274>
295. Time-Domain Analysis of Tamper Displacement during Dynamic Compaction Based on Automatic Control. Li, X., Yang, H., Zhang, J.Y. et al. *Coatings*, 11, (2021) 1092. Cited: 16. <https://doi.org/10.3390/coatings11091092>
296. A Smart Patch with On-Demand Detachable Adhesion for Bioelectronics. Shi, X.F. and Wu, P.Y. *Small*, 17, (2021) 2101220. Cited: 15. <https://doi.org/10.1002/smll.202101220>
297. Enhanced mechanical properties of 6082 aluminum alloy via SiC addition combined with squeeze casting. Jiang, W.M., Zhu, J.W., Li, G.Y. et al. *Journal of Materials Science & Technology*, 88, (2021) 119. Cited: 15. <https://doi.org/10.1016/j.jmst.2021.01.077>

298. Magnetic Fe₃S₄ LTMCs micro-flowers@ wax gourd aerogel-derived carbon hybrids as efficient and sustainable electromagnetic absorber. Pan, F., Liu, Z.C., Deng, B.W. et al. Carbon, 179, (2021) 554. Cited: 14. <https://doi.org/10.1016/j.carbon.2021.04.053>
299. Augmenting the photoluminescence efficiency via enhanced energy-relocation of new white-emitting BaYAlZn₃O₇:Dy³⁺ nano-crystalline phosphors for WLEDs. Sehrawat, P., Malik, R.K., Punia, R. et al. Journal of Alloys and Compounds, 879, (2021) 160371. Cited: 14. <https://doi.org/10.1016/j.jallcom.2021.160371>
300. Partially-exposed cast-in-situ concrete degradation induced by internal-external sulfate and magnesium multiple coupled attack. Zhao, G.W., Guo, M.Z., Cui, J.F. et al. Construction and Building Materials, 294, (2021) 123560. Cited: 11. <https://doi.org/10.1016/j.conbuildmat.2021.123560>
301. Morphology-controllable synthesis of polyurethane-derived highly cross-linked 3D networks for multifunctional and efficient electromagnetic wave absorption. Zhu, X.J., Dong, Y.Y., Xiang, Z. et al. Carbon, 182, (2021) 254. Cited: 11. <https://doi.org/10.1016/j.carbon.2021.06.028>
302. An Adaptive Machine Learning Method Based on Finite Element Analysis for Ultra Low-k Chip Package Design. Chu, W.S., Ho, P.S. and Li, W. Ieee Transactions on Components Packaging and Manufacturing Technology, 11, (2021) 1435. Cited: 10. <https://doi.org/10.1109/TCPMT.2021.3102891>
303. Fe-embedded Au (111) monolayer as an electrocatalyst for N₂ reduction reaction: A first-principles investigation. Fu, L., Yan, L.B., Lin, L. et al. Journal of Alloys and Compounds, 875, (2021) 159907. Cited: 9. <https://doi.org/10.1016/j.jallcom.2021.159907>
304. A novel Z-scheme CeO₂/g-C₃N₄ heterojunction photocatalyst for degradation of Bisphenol A and hydrogen evolution and insight of the photocatalysis mechanism. Zhao, W., She, T.T., Zhang, J.Y. et al. Journal of Materials Science & Technology, 85, (2021) 18. Cited: 9. <https://doi.org/10.1016/j.jmst.2020.12.064>
305. Properties of Eco-Friendly Particleboards Bonded with Lignosulfonate-Urea-Formaldehyde Adhesives and pMDI as a Crosslinker. Bekhta, P., Noshchenko, G., Reh, R. et al. Materials, 14, (2021) 4875. Cited: 9. <https://doi.org/10.3390/ma14174875>
306. Free-standing and flexible CNT/(Fe@Si@SiO₂) composite anodes with kernel-pulp-skin nanostructure for high-performance lithium-ion batteries. Zhang, M., Li, L.H., Jian, X.L. et al. Journal of Alloys and Compounds, 878, (2021) 160396. Cited: 8. <https://doi.org/10.1016/j.jallcom.2021.160396>
307. A high-performance aqueous rechargeable zinc battery based on organic cathode integrating quinone and pyrazine. Gao, Y.J., Li, G.F., Wang, F. et al. Energy Storage Materials, 40, (2021) 31. Cited: 8. <https://doi.org/10.1016/j.ensm.2021.05.002>

308. Highly Sensitive Salinity and Temperature Sensor Using Tamm Resonance. Zaky, Z.A. and Aly, A.H. *Plasmonics*, 16, (2021) 2315. Cited: 8. <https://doi.org/10.1007/s11468-021-01487-6>
309. Electro-induced shape memory effect of 4D printed auxetic composite using PLA/TPU/CNT filament embedded synergistically with continuous carbon fiber: A theoretical & experimental analysis. Dong, K., Panahi-Sarmad, M., Cui, Z.Y. et al. *Composites Part B-Engineering*, 220, (2021) 108994. Cited: 7. <https://doi.org/10.1016/j.compositesb.2021.108994>
310. Advance on flexible pressure sensors based on metal and carbonaceous nanomaterial. Liu, M.Y., Hang, C.Z., Zhao, X.F. et al. *Nano Energy*, 87, (2021) 106181. Cited: 5. <https://doi.org/10.1016/j.nanoen.2021.106181>