

Тема

Environmental problems of battery recycling (Экологические проблемы утилизации батареек)

Запросы

1. battery recycling

Google Академия

battery recycling

Статьи

Результатов: примерно 365 000 (0,04 сек.)

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С 2023

С 2022

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Любые статьи

Обзорные статьи

☐ включая патенты

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☒ Создать оповещение

[HTML] The importance of design in lithium ion **battery recycling**—a critical review

DL Thompson, JM Hartley, SM Lambert, M Shiref... - Green ..., 2020 - pubs.rsc.org

... **battery recycling** and discusses the aspects of pack, module and cell design that can simplify **battery** dismantling and **recycling**. ... the appropriate direction for **recycling**. It also shows that ...

☆ Сохранить Цитировать Цитируется: 205 Похожие статьи Все версии статьи (15)

[HTML] Current and prospective Li-ion **battery recycling** and recovery processes

J Heelan, E Gratz, Z Zheng, Q Wang, M Chen... - Jom, 2016 - Springer

... -ion **battery** gets US\$300/kWh then the actually **recycling** rate ... ion **battery recycling** industry is dominated by laptop **batteries**... **batteries** are the heaviest and have the highest **recycling** rate...

☆ Сохранить Цитировать Цитируется: 275 Похожие статьи Все версии статьи (5)

Toward practical lithium-ion **battery recycling**: adding value, tackling circularity and **recycling**-oriented design

J Mao, C Ye, S Zhang, F Xie, R Zeng... - Energy & ..., 2022 - pubs.rsc.org

... **batteries** to boost **recycling** and assess possible **recycling**-oriented design of cell configuration, electrode, and materials for **recycling**. ... for **recycling**, advanced **recycling** technologies and ...

☆ Сохранить Цитировать Цитируется: 66 Похожие статьи Все версии статьи (3)

[HTML] A laboratory-scale lithium-ion **battery recycling** process

M Contestabile, S Panero, B Scrosati - Journal of Power Sources, 2001 - Elsevier

... in the manufacture of new **batteries**, thus achieving a 'true' **recycling** of these materials. With ... the **recycling** and the disposal of used lithium primary **batteries**, namely Li/MnO 2 **batteries**, ...

☆ Сохранить Цитировать Цитируется: 498 Похожие статьи Все версии статьи (11)

Похожие запросы

lithium ion battery recycling

spent battery recycling

2. ecology and batteries

Google Академия

ecology and batteries

Статьи

Результатов: примерно 245 000 (0,09 сек.)

За все время

C 2023

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Создать оповещение

Ecological recycling of lithium-ion **batteries** from electric vehicles with focus on mechanical processes

[PDF] iop.org

J Diekmann, C Hanisch, L Frobose... - Journal of the ..., 2016 - iopscience.iop.org

... non-aged lithium-ion **batteries** during dry crushing, ... **batteries** and its challenges and hazard potential in regards to the applied materials. The outlined results show a safe and **ecological** ...

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Цитировать

Цитируется: 249

Похожие статьи

Все версии статьи (4)

[HTML] A higher-order model of **ecological** values and its relationship to personality

[HTML] sciencedirect.com

M Wiseman, EX Bogner - Personality and Individual differences, 2003 - Elsevier

... The personality items, too, were presented within this context: the test administrator described them as "smuggled under the **ecology battery**" and, therefore, the respondents may have ...

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Цитировать

Цитируется: 348

Похожие статьи

Все версии статьи (7)

[HTML] Investigating greenhouse gas emissions and environmental impacts from the production of lithium-ion **batteries** in China

[HTML] sciencedirect.com

X Lai, H Gu, Q Chen, X Tang, Y Zhou, F Gao... - Journal of Cleaner ..., 2022 - Elsevier

... In this study, the GHG emissions and ten **ecological** indicators of six types of LIBs during **battery** production are quantitatively investigated. Furthermore, carbon emissions from ...

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Цитировать

Цитируется: 18

Похожие статьи

Все версии статьи (3)

A Review of **Battery** Management System and Modern State Estimation Approaches in Lithiumion **Batteries** for Electric Vehicle

H Bashir, A Yaghoob, I Jawaid, W Khalid... - 2022 5th ..., 2022 - ieeexplore.ieee.org

... **battery**-based vehicles are performing extraordinarily in developing pollution-free environment and better **ecological** ... for EV **battery** and techniques available for **battery** accurate states ...

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Цитировать

Цитируется: 4

Похожие статьи

3. environmental damage of batteries

Google Академия

environmental damage of batteries

Статьи

Результатов: примерно 512 000 (0,11 сек.)

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[HTML] Key issues of lithium-ion **batteries**—from resource depletion to **environmental** performance indicators

[HTML] sciencedirect.com

L Oliveira, M Messagie, S Rangaraju, J Sanfelix... - Journal of cleaner ..., 2015 - Elsevier

... key **environmental** performance indicators and are taken into account. The dominant differences between the two **batteries** ... opportunities for eventual **environmental damage** reductions. ...

Сохранить

Цитировать

Цитируется: 168

Похожие статьи

Все версии статьи (7)

Environmental impact assessment and end-of-life treatment policy analysis for Li-ion **batteries** and Ni-MH **batteries**

[PDF] mdpi.com

Y Yu, B Chen, K Huang, X Wang, D Wang - ... journal of **environmental** ..., 2014 - mdpi.com

... is based on the principles of **environmental damage**. The term "**damage**" includes 11 aspects, which can be grouped according to three main types of **damage** (Table 3). Standard Eco...

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Цитировать

Цитируется: 57

Похожие статьи

Все версии статьи (13)

[HTML] Recycling and **environmental** issues of lithium-ion **batteries**: Advances, challenges and opportunities

[HTML] sciencedirect.com

CM Costa, JC Barbosa, R Gonçalves, H Castro... - Energy Storage ..., 2021 - Elsevier

... **environmental damage** will occur as a result of LIB production and disposal. In these **damages** ... Lithium-**battery** recycling can help to preserve the environment, save resources, reduce ...

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Цитировать

Цитируется: 201

Похожие статьи

Все версии статьи (3)

Life cycle **environmental** assessment of lithium-ion and nickel metal hydride **batteries** for plug-in hybrid and **battery** electric vehicles

[HTML] acs.org

G Majeau-Bettez, TR Hawkins... - **Environmental** science & ..., 2011 - ACS Publications

... The final shipping and the productions of the cell containers, module packaging, separator material, and electrolyte contribute relatively little to the **environmental damage**, with ...

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Похожие статьи

Все версии статьи (16)

Статьи

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Technological options and design evolution for recycling spent lithium-ion batteries: Impact, challenges, and opportunities

Rumana Hossain  Montajar Sarkar, Veena Sahajwalla First published: 26 May 2023 | <https://doi.org/10.1002/wene.481>

Edited by: Georgianna Doffek, Managing Editor and Peter Lund, Co-Editor-in-Chief

SECTIONS



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Abstract

The lithium-ion battery (LIB) market is growing, driven by consumer demand and the imperative to reduce greenhouse gas (GHG) emissions. The socio-environmental impacts of LIBs production are vast; thus, it is of paramount importance to acquire knowledge about the consequences of lithium metal mining on human health, farming and the overall ecosystem. The materials embedded in spent LIBs have high industrial value. To



Volume 12, Issue 5

September/October 2023
e481

Figures



References



Related



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[Sodium ion batteries: a newer electrochemical storage](#)

C. Nithya, S. Gopukumar

WIREs Energy and Environment

[A comprehensive review on recent advances of polyanionic cathode materials in Na-ion batteries for cost effective energy storage applications](#)

Авторы

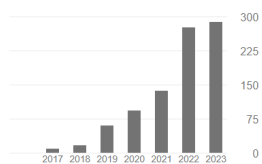
 Академия**Rumana Hossain**Research Associate, SMaRT@UNSW, UNSW Australia
Подтвержден адрес электронной почты в домене unsw.edu.au
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СОЗДАТЬ СВОЙ ПРОФИЛЬ

НАЗВАНИЕ	ПРОЦИТИРОВАНО	ГОД
Recycle, recover and repurpose strategy of Spent Li-ion Batteries and catalysts: current status and future opportunities D.J. Garole, R. Hossain, V.J. Garole, V. Sahajwalla, J. Nerkar, D.P. Dubal ChemSusChem 13 (12), 3079-3100	102	2020
A global review of consumer behavior towards e-waste and implications for the circular economy M.T. Islam, N. Huda, A. Baumber, R. Shumon, A. Zaman, F. Ali, R. Hossain, ... Journal of Cleaner Production 316, 128297	75	2021
Stability of retained austenite in high carbon steel under compressive stress: an investigation from macro to nano scale R. Hossain, F. Pahlevani, M.Z. Quadir, V. Sahajwalla Scientific reports 6	75	2016
Recovery of rare earth (ie, La, Ce, Nd, and Pr) oxides from end-of-life Ni-MH battery via thermal isolation S. Maroufi, R.K. Nekouei, R. Hossain, M. Assefi, V. Sahajwalla ACS Sustainable Chemistry & Engineering 6 (9), 11811-11818	42	2018
Effect of small addition of Cr on stability of retained austenite in high carbon steel R. Hossain, F. Pahlevani, V. Sahajwalla Materials 12 (1), 1-12	42	2017

Процитировано

	Все	Начиная с 2018 г.
Статистика цитирования	889	878
h-индекс	15	15
i10-индекс	28	28



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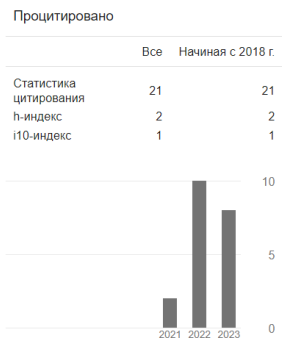
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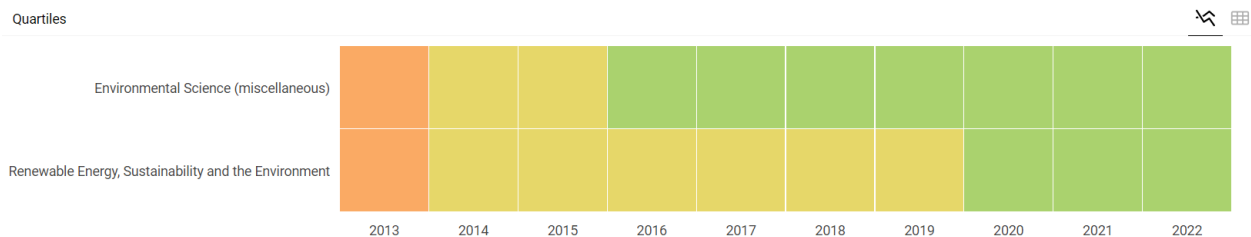
Название	Пропорциировано	Год
Surface, mechanical and shape memory properties of biodegradable polymers and their applications M Sarkar, M Hasanuzzaman, F Gulshan, A Rashid Elsevier	16	2022
Wide-bandgap semiconductor device technologies for high temperature and harsh environment applications MR Islam, RH Galib, M Sarkar, S Chowdhury Harsh environment electronics. Interconnect materials and performance assessment	3	2018
Unravelling the properties of microzonal carbon from waste hard rubber by selective thermal transformation via conventional heating and microwave irradiation M Sarkar, R Hossain, V Sahajwalla Carbon 213 118274	1	2023

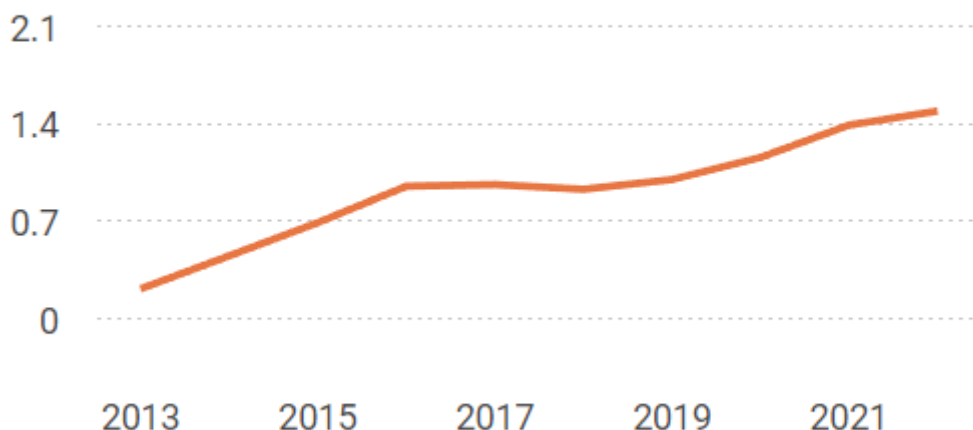


Показатели журнала

Wiley Interdisciplinary Reviews: Energy and Environment

COUNTRY United Kingdom Universities and research institutions in United Kingdom Media Ranking in United Kingdom	SUBJECT AREA AND CATEGORY Energy └ Renewable Energy, Sustainability and the Environment Environmental Science └ Environmental Science (miscellaneous)	PUBLISHER John Wiley and Sons Ltd	H-INDEX 47
PUBLICATION TYPE Journals	ISSN 20418396, 2041840X	COVERAGE 2012-2022	INFORMATION Homepage How to publish in this journal energy@wiley.com





2.

ADVANCED MATERIALS

Review | [Full Access](#)

Towards Sustainable All Solid-State Li-metal Batteries: Perspectives on Battery Technology and Recycling Processes

Xiaoxue Wu, GuanJun Ji, Junxiong Wang, Guangmin Zhou✉, Zheng Liang✉

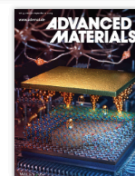
First published: 16 May 2023 | <https://doi.org/10.1002/adma.202301540> | Citations: 1

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Abstract

Lithium (Li)-based batteries are gradually evolving from the liquid to the solid state in terms of safety and energy density, where all solid-state Li-metal batteries (ASSLMBs) are considered the most promising candidates. This was demonstrated by the Bluecar electric vehicle produced by the Bolloré Group, which is utilized in car-sharing services in several cities worldwide. Despite impressive progress in the development of ASSLMBs,



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Benign Recycling of Spent Batteries towards All-Solid-State Lithium Batteries

Yao-Yao Wang, Wan-Yue Diao, Chao-Ying Fan, Xing-Long Wu, Jing-Ping Zhang

Chemistry – A European Journal

Solid-State Plastic Crystal Electrolytes: Effective Protection Interlayers for Sulfide-Based All-Solid-State Lithium Metal Batteries

Авторы



Guanjun Ji

Ph.D. at Shanghai Jiao Tong University and Tsinghua SIGS
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[LIBs recycling](#) [cathode materials](#)

ПОДПИСАТЬСЯ

СОЗДАТЬ СВОЙ ПРОФИЛЬ

НАЗВАНИЕ	ПРОЦИТИРОВАНО	ГОД
Ammonia leaching mechanism and kinetics of LiCoO2 material from spent lithium-ion batteries D Li, B Zhang, X Ou, J Zhang, K Meng, G Ji, P Li, J Xu Chinese Chemical Letters 7 (7), 2333-2337	38	2021
Efficient extraction of lithium from anode for direct regeneration of cathode materials of spent Li-ion batteries J Wang, J Ma, K Jia, Z Liang, G Ji, Y Zhao, B Li, G Zhou, HM Cheng ACS Energy Letters 7 (8), 2816-2824	33	2022
Closed-loop regeneration of LiFePO4 from spent lithium-ion batteries: A "feed three birds with one stone" strategy toward advanced cathode materials D Peng, J Zhang, J Zou, G Ji, L Ye, D Li, B Zhang, X Ou Journal of Cleaner Production 316, 128098	33	2021

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Junxiong Wang

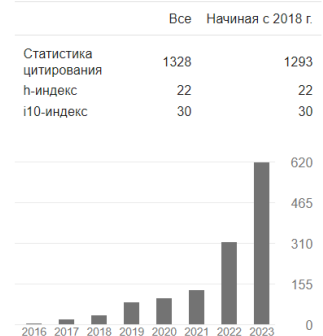
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НАЗВАНИЕ	ПРОЦИТИРОВАНО	ГОД
A critical review on secondary lead recycling technology and its prospect W Zhang, J Yang, X Wu, Y Hu, W Yu, J Wang, J Dong, M Li, S Liang, J Hu, ... Renewable and Sustainable Energy Reviews 61, 108-122	193	2016
Lithium fluoride in electrolyte for stable and safe lithium-metal batteries YH Tan, GX Lu, JH Zheng, F Zhou, M Chen, T Ma, LL Lu, YH Song, ... Advanced Materials 33 (42), 2102134	93	2021
Direct conversion of degraded LiCoO2 cathode materials into high-performance LiCoO2: a closed-loop green recycling strategy for spent lithium-ion batteries J Wang, Z Liang, Y Zhao, J Sheng, J Ma, K Jia, B Li, G Zhou, HM Cheng Energy Storage Materials 45, 768-776	81	2022
Synthesis of Nanostructured PbO@C Composite Derived from Spent Lead-Acid Battery for Next-Generation Lead-Carbon Battery Y Hu, J Yang, J Hu, J Wang, S Liang, H Hou, X Wu, B Liu, W Yu, X He, ...	69	2018

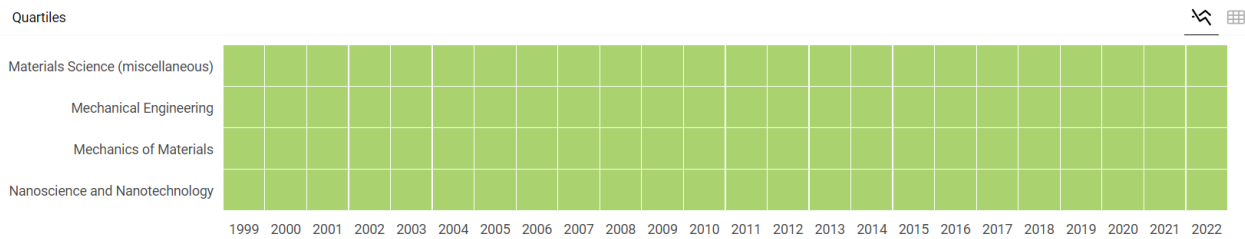
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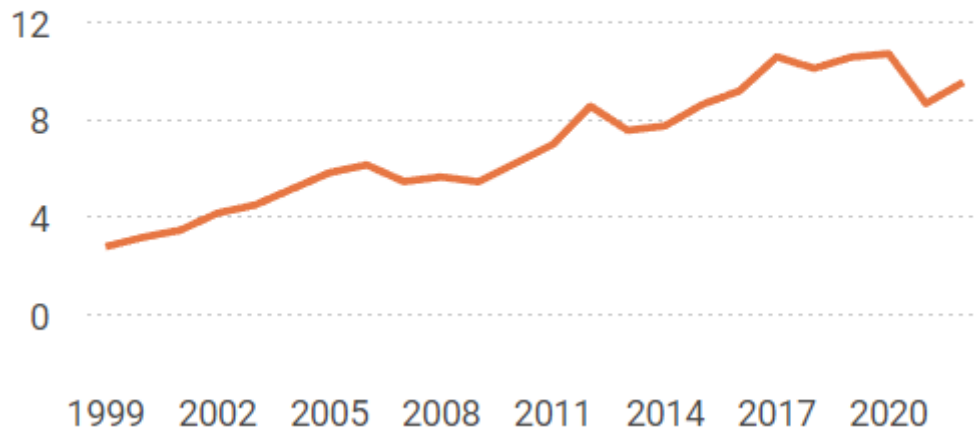
Показатели журнала

Advanced Materials

COUNTRY United States Universities and research institutions in United States Media Ranking in United States	SUBJECT AREA AND CATEGORY Engineering └ Mechanical Engineering └ Mechanics of Materials Materials Science └ Materials Science (miscellaneous) └ Nanoscience and Nanotechnology	PUBLISHER Wiley-Blackwell	H-INDEX 605
PUBLICATION TYPE Journals	ISSN 09359648, 15214095	COVERAGE 1989-2022	INFORMATION Homepage How to publish in this journal advmat@wiley-vch.de



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3.

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Are future recycling benefits misleading? Prospective life cycle assessment of lithium-ion batteries

Joris Šimaitis, Stephen Allen, Christopher Vagg

First published: 22 June 2023 | <https://doi.org/10.1111/jiec.13413>

Editor Managing Review: Mark Huijbregts

Early View
Online Version of Record before inclusion in an issue

Translations

- 《产业生态学》中文摘要 (JIE Chinese Abstracts)
- Resúmenes en Español de la Revista de Ecología Industrial (JIE Spanish Abstracts)

Abstract

Life cycle assessment (LCA) quantifies the whole-life environmental impacts of products and is essential for helping policymakers and manufacturers transition toward sustainable practices. However, typical LCA estimates future recycling benefits as if it happens today. For long-lived products such as lithium-ion batteries, this may be misleading since there is a considerable time gap between production and recycling. To explore this temporal mismatch problem, we apply future electricity scenarios from an integrated assessment model—IMAGE—using “premise” in Brightway2 to conduct a prospective LCA (pLCA) on the global warming potential of six battery chemistries and

Figures References Related Information

Metrics

Full text views: 1,933

Details

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Авторы



Stephen R Allen

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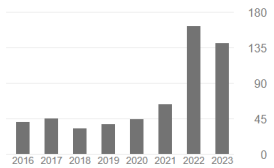
life cycle assessment energy systems analysis sustainable design sustainable energy
sustainable materials

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НАЗВАНИЕ	ПРОЦИТИРОВАНО	ГОД
Prospects for and barriers to domestic micro-generation: A United Kingdom perspective SR Allen, GP Hammond, MC McManus Applied energy 85 (6), 528-544	299	2008
Life cycle assessment in the building design process—A systematic literature review M Roberts, S Allen, D Coley Building and Environment 185, 107274	92	2020
Integrated appraisal of a solar hot water system SR Allen, GP Hammond, HA Harajli, MC McManus, AB Winnett Energy 35 (3), 1351-1362	91	2010
Energy analysis and environmental life cycle assessment of a micro-wind turbine SR Allen, GP Hammond, MC McManus Proceedings of the Institution of Mechanical Engineers, Part A: Journal of ...	87	2008
Integrated appraisal of micro-generators: methods and applications SR Allen, GP Hammond, HA Harajli, GJ Jones, MC McManus, AB Winnett Proceedings of the Institution of Civil Engineers-Energy 161 (2), 73-86	61	2008
A circular construction evaluation framework to promote designing for disassembly and adaptability R Dame, D Mackall, A Shao, S Allen, M Driessner, T Kratzerhmann	44	2021

Прочитано [ПРОСМОТРЕТЬ ВСЕ](#)

	Все	Начиная с 2018 г.
Статистика цитирования	936	483
h-индекс	13	11
i10-индекс	13	11



Общий доступ [ПРОСМОТРЕТЬ ВСЕ](#)

3 статьи — 14 статей
 недоступно — доступно



Chris Vagg

University of Bath

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Batteries Hybrid Vehicles Electric Vehicles Driver Behavior Eco-Driving

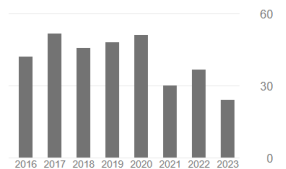


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НАЗВАНИЕ	ПРОЦИТИРОВАНО	ГОД
Stochastic dynamic programming in the real-world control of hybrid electric vehicles C Vagg, S Akehurst, C J Brace, L Ash IEEE Transactions on Control Systems Technology 24 (3), 853-866	89	2015
Development and field trial of a driver assistance system to encourage eco-driving in light commercial vehicle fleets C Vagg, C J Brace, D Hari, S Akehurst, J Poxon, L Ash IEEE Transactions on Intelligent Transportation Systems 14 (2), 796-805	85	2013
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Modelling and heuristic control of a parallel hybrid electric vehicle W Enang, C Bannister, C Brace, C Vagg Proceedings of the Institution of Mechanical Engineers, Part D: Journal of ...	33	2015
Analysis of a driver behaviour improvement tool to reduce fuel consumption D Hari, C J Brace, C Vagg, J Poxon, L Ash 2012 International Conference on Connected Vehicles and Expo (ICCVE), 208-213	33	2012
Development of a new method to assess fuel saving using gear shift indicators C Vagg, C J Brace, R Wietunio, S Akehurst, L Ash	32	2012

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	Все	Начиная с 2018 г.
Статистика цитирования	384	236
h-индекс	8	7
i10-индекс	7	6



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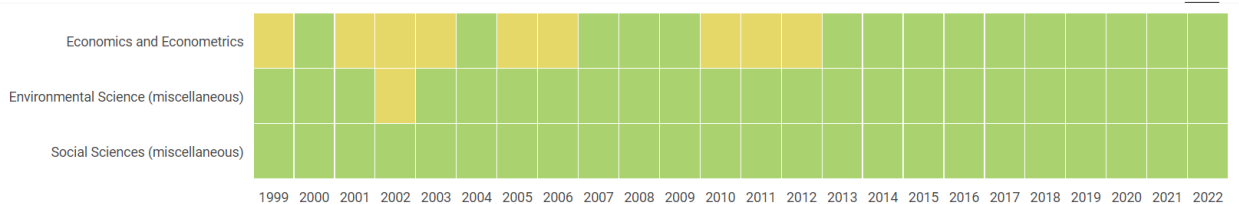
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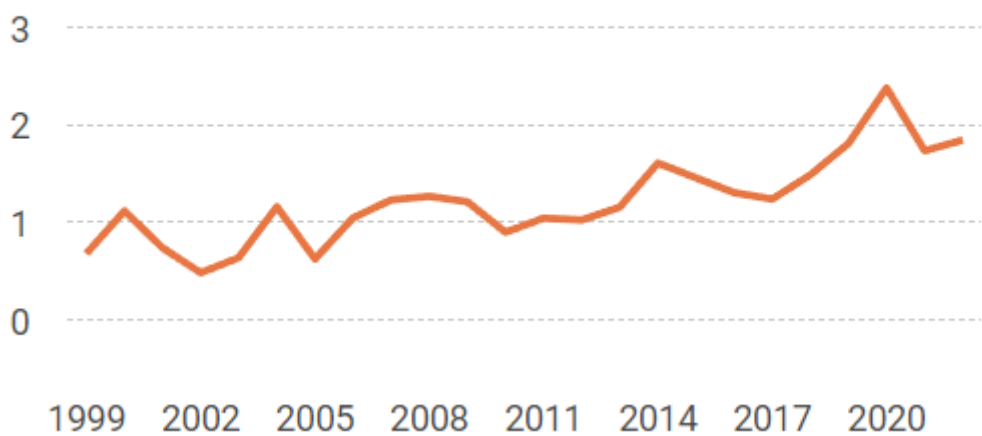
Journal of Industrial Ecology

COUNTRY United States  Universities and research institutions in United States  Media Ranking in United States	SUBJECT AREA AND CATEGORY Economics, Econometrics and Finance └ Economics and Econometrics Environmental Science └ Environmental Science (miscellaneous) Social Sciences └ Social Sciences (miscellaneous)	PUBLISHER Wiley-Blackwell	H-INDEX 123
PUBLICATION TYPE Journals	ISSN 10881980, 15309290	COVERAGE 1997-2022	INFORMATION Homepage How to publish in this journal indec@yale.edu

Quartiles



 SJR



4.



Batteries & Supercaps



Volume 3, Issue 11

November 2020

Pages 1126-1136

Review | [Full Access](#)

Towards a More Sustainable Lithium-Ion Battery Future: Recycling LIBs from Electric Vehicles

Aniket Chitre, Daniel Freake, Dr. Laura Lander, Dr. Jacqueline Edge, Prof. Maria-Magdalena Titirici ✉

First published: 21 July 2020 | <https://doi.org/10.1002/batt.202000146> | Citations: 19

SECTIONS



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Graphical Abstract

Sustainable mobility: There is an urgent need to develop and scale-out Li-ion battery recycling processes, for the upcoming transition to electric vehicles to truly deliver on its promise of enhanced sustainability and low-carbon emissions. This paper reviews current recycling technologies, their limitations and challenges and proposes improvements to facilitate more effective recovery from



Figures



References



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[High-Capacity NiO-\(Mesocarbon Microbeads\) Conversion Anode for Lithium-Ion Battery](#)

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[A SiO_x-Based Anode in a High-Voltage Lithium-Ion Battery](#)

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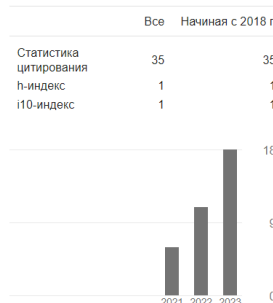
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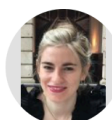
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СОЗДАТЬ СВОЙ ПРОФИЛЬ

НАЗВАНИЕ	ПРОЦИТИРОВАНО	ГОД
Towards a more sustainable lithium-ion battery future: recycling libs from electric vehicles A Chitre, D Freake, L Lander, J Edge, MM Titirici Batteries & Supercaps 3 (11), 1126-1136	34	2020
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King's College London

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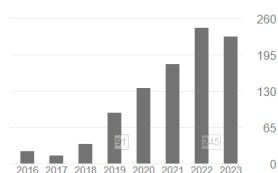
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h-индекс	14	14
i10-индекс	16	15



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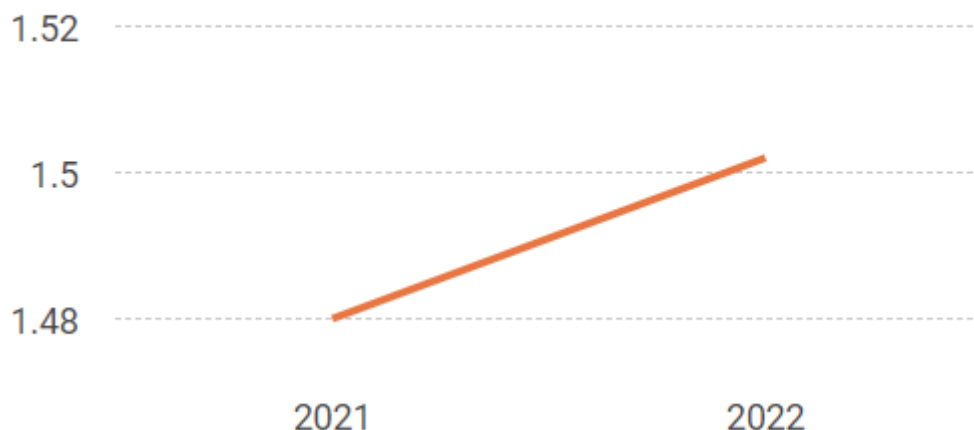
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Progresses in Sustainable Recycling Technology of Spent Lithium-Ion Batteries

Kaidi Du, Edison Huixiang Ang, Xinglong Wu, Yichun Liu

First published: 12 September 2021 | <https://doi.org/10.1002/eem2.12271> | Citations: 48

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Abstract

The number of lithium-ion batteries (LIBs) is steadily increasing in order to meet the ever-growing demand for sustainable energy and a high quality of life for humankind. At the same time, the resulting large number of LIB waste certainly poses safety hazards if it is not properly disposed of and will seriously harm the environment due to its inherent toxicity due to the use of toxic substances. Moreover, the consumption of many scarce precious metal resources is behind the mass production of batteries. In the light of severe environmental, resources, safety and recycling problems, recycling spent LIBs have become an essential urgently needed action to achieve sustainable social

Figures References Related Information

Recommended

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Yijia Shao, Bin Huang, Zhiyuan Lu, Yanchen Liu, Xiangbo Meng, Li Du, Huiyu Song, Shijun Liao

Energy Technology

High-Capacity Spherical $\text{LiNi}_{0.82}\text{Co}_{0.15}\text{Al}_{0.03}\text{O}_2$ Cathode for Lithium-Ion Batteries

Guoliang Bai, Chunhua Wang, Jiaojiao Luo, Hongyu Xia, Dihe Luo, Junwei Wang

Авторы

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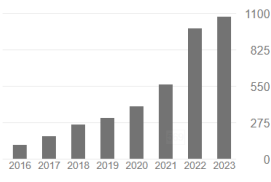
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i10-индекс	55	53



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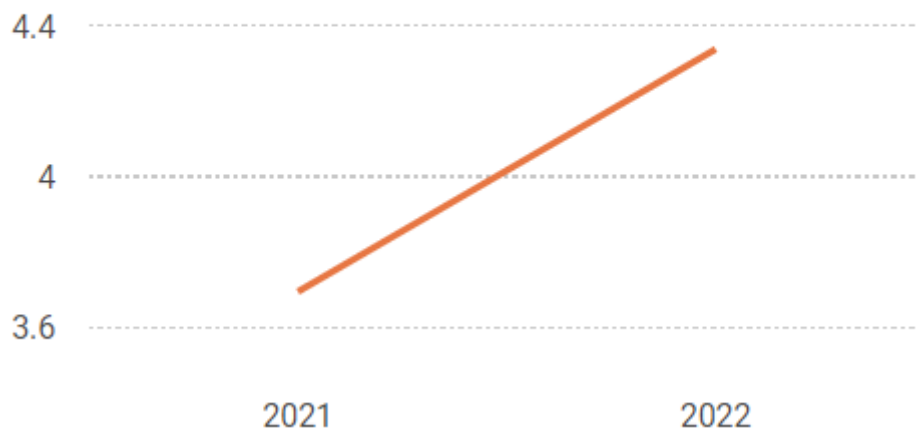
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