|  |  |  |  |
| --- | --- | --- | --- |
| Title | A high surface area tunnel-type α-MnO2 nanorod cathode by a simple solvent-free synthesis for rechargeable aqueous zinc-ion batteries | | |
| Author(s) Name | Muhammad Hilmy Alfaruqi, Saiful Islam, Jihyeon Gim, Jinju Song, Sungjin Kim, Duong Tung Pham, Jeonggeun Jo, Zhiliang Xiu, Vinod Mathew, Jaekook Kim | | |
| Contact Email(s) | jaekook@chonnam.ac.kr | | |
| Published Journal Name | [Chemical Physics Letters](https://www.sciencedirect.com/science/journal/00092614) | | |
| Type of Publication | Journal | | |
| Volume | 650 | Issue | 16 April, 2016 |
| Publisher | Elsevier | | |
| Publication Date | Apr 16, 2016 | | |
| ISSN | 92614 | | |
| DOI | https://doi.org/10.1016/j.cplett.2016.02.067 | | |
| URL | https://www.sciencedirect.com/science/article/abs/pii/S000926141630094X | | |
| Other Related Info. | Page 64-68 | | |
|  | | | |

|  |  |
| --- | --- |
| Abstract |  |
| Tunnel-type α-MnO2 with a nanorod morphology was prepared via a simple solvent-free synthesis method for use in aqueous zinc-ion battery (ZIB). This synthesis method produced α-MnO2 with a high BET surface area of 153 m2 g−1. α-MnO2 electrode demonstrated remarkable zinc storage properties (first and second discharge capacities of 323 and 270 mAh g−1 at 16 mA g−1) with good capacity retentions and rate capability. After charging within only 60 s, the α-MnO2 nanorod cathode delivered a considerable discharge capacity of 115 mAh g−1 when cycled at current density of 16 mA g−1. | |