5GH Foundation

One "Top 2% Scientist" Earned Abnormal Citations via "Citation-from-Pal" and "Citation-from-Themself"

ZHU Bin (朱斌), who earned the title of "Top 2% Scientist" in 2022, and is working for Royal Institute of Technology, Sweden, and Southeast University, China, is found to receive abnormal citations via "Citation-from-Pal" and "Citation-from-Themself".

An investigation by the 5GH Team [1] finds an article coauthored by Rizwan Raza, a frequent coauthor with ZHU, cites 14 of ZHU's publications in its opening sentence: "The fuel cell research community has recently paid close attention to nanocomposite ceramic fuel cells [1-15]". Although 9 of these 14 citations were also coauthored by Raza, this unusually high concentration of citations to a specific author raises concerns about potential citation manipulation to inflate ZHU's metrics.

Title: Structural and electrochemical analysis of enhanced ionic conductivity and oxygen permeability in La0.60Bi0.15 Cr0.05Fe0.20O3-δ nanocomposites for high-performance ceramic fuel cells
Authors: Ghulam Dastgir, Muhammad Fakhar-E-Alam, Ahlem Guesmi, **Rizwan Raza**, Muhammad Rafaqat
DOI: 10.1016/j.ceramint.2025.05.426

Citation Statement: The fuel cell research community has recently paid close attention to nanocomposite ceramic fuel cells [1-15]

#	Title	Authors
1	Single-component and three-component fuel cells	**Bin Zhu**, **Rizwan Raza**, Haiying Qin, Liangdong Fan
2	A single-component fuel cell reactor	**Bin Zhu**, Haiying Qin, **Rizwan Raza**, Qinghua Liu, Liangdong Fan, Janne Patakangas, Peter Lund
3	An Electrolyte-Free Fuel Cell Constructed from One Homogenous Layer with Mixed Conductivity	**Bin Zhu**, **Rizwan Raza**, Ghazanfar Abbas, Manish Singh
4	A fuel cell with a single component functioning simultaneously as the electrodes and electrolyte	**Bin Zhu**, Ying Ma, Xiaodi Wang, **Rizwan Raza**, Haiying Qin, Liangdong Fan
5	Advanced electrolyte-free fuel cells based on functional nanocomposites of a single porous component: analysis, modeling and validation	Qinghua Liu, Haiying Qin, **Rizwan Raza**, Liangdong Fan, Yongdan Li, **Bin Zhu**
6	Mixed ion and electron conductive composites for single component fuel cells: I. Effects of composition and pellet thickness	Liangdong Fan, Chengyang Wang, Ose Osamudiamen, **Rizwan Raza**, Manish Singh, **Bin Zhu**
7	Integration design of membrane electrode assemblies in low temperature solid oxide fuel cell	Haiying Qin, **Bin Zhu**, **Rizwan Raza**, Manish Singh, Liangdong Fan, Peter Lund
8		
9	Breakthrough fuel cell technology using ceria-based multi-functional nanocomposites	**Bin Zhu**, Liangdong Fan, Peter Lund
10	A new energy conversion technology based on nano-redox and nano-device processes	**Bin Zhu**, Peter Lund, **Rizwan Raza**, Janne Patakangas, Qiu-An Huang, Liangdong Fan, Manish Singh
11	Recent development of ceria-based (nano)composite materials for low temperature ceramic fuel cells and electrolyte-free fuel cells	Liangdong Fan, Chengyang Wang, Mingming Chen, **Bin Zhu**
12	Schottky junction effect on high performance fuel cells based on nanocomposite materials	**Bin Zhu**, Peter D. Lund, **Rizwan Raza**, Ying Ma, Liangdong Fan, Muhammad Afzal, Janne Patakangas, Yunjun He, Yufeng Zhao, Wenyi Tan, Qiu-An Huang, Jun Zhang, Hao Wang
13	Novel fuel cell with nanocomposite functional layer designed by perovskite solar cell principle	**Bin Zhu**, Yizhong Huang, Liangdong Fan, Ying Ma, Baoyuan Wang, Chen Xia, Muhammad Afzal, Bowei Zhang, Wenjing Dong, Hao Wang, Peter D. Lund
14	Mixed ionic-electronic conductor membrane based fuel cells by incorporating semiconductor Ni0.8Co0.15Al0.05LiO2−δ into the Ce0.8Sm0.2O2−δ-Na2CO3 electrolyte	Wei Zhang, Yixiao Cai, Baoyuan Wang, Chen Xia, Wenjing Dong, Junjiao Li, **Bin Zhu**
15	Natural CuFe2O4 mineral for solid oxide fuel cells	Yanyan Liu, Yan Wu, Wei Zhang, Jing Zhang, Baoyuan Wang, Chen Xia, Muhammad Afzal, Junjiao Li, Manish Singh, **Bin Zhu**

Citation Statement: Perovskite-based oxides have received much attention as SL-SOCFC materials because of their adjustable electrical and ionic conductivity and reliability under operating circumstances [28,29]

#	Title	Authors
28	Effects of composition on the electrochemical property and cell performance of single layer fuel cell	Huiqing Hu, Qizhao Lin, Zhigang Zhu, Xiangrong Liu, Muhammad Afzal, Yunjuan He, **Bin Zhu**

Citation Statement: For engineering use and future commercial applications, strategies to scale up this cutting-edge and inventive SOFC technology should be devised [33].

#	Title	Authors
33	Scaling Up and Characterization of Single-Layer Fuel Cells	Yifeng Zheng, Chen Xia, Wenjing Dong, Junjiao Li, **Bin Zhu**

A separate investigation from the team [2] finds another Raza-coauthored article that cites 15 papers by ZHU, accounting for 52% of its total references. Similarly, a third article [3] authored by Raza includes 11 citations to ZHU's work out of the 60 total references.

4. Conclusions

The one-step co-precipitation technique has a number of scientific advantages, such as simple preparation modus operandi for enhanced quality control; better homogeneity at the nanoscale; improve and enhance the ionic conductive properties of ceria–carbonate electrolyte and cause superionic conduction at low temperatures. The as-prepared electrolytes exhibited a glass transition 300 °C. The XRD indexing emphasizes that all electrolytes execute cubic fluorite structure. Since the as prepared ceria based nanocomposite electrolytes are two-phase materials. The first phase is cubic crystallite phase and second phase of alkali elements (Li, Na, K) were found to be amorphous. The Arrhenius plot was obtained using linear fitting technique from the electrochemical impedance spectroscopy data. The LNK-SDC nanocomposite electrolyte exhibits 0.098 Scm^{-1} ionic conductivity in air atmosphere, which is greater than that of others LN-SDC and NK-SDC electrolytes. The low activation energies of the nanocomposite electrolytes (LNK-SDC, LN-SDC, NK-SDC) in the air atmosphere were found to be 0.59 eV, 0.48 eV and 0.32 eV respectively, which indicates the fast chemical reaction occurs after supplying the fuel. Power peak densities of 286 mW/cm^2, 337 mW/cm^2, and 484 mW/cm^2 were achieved at 570 °C for a single cell based electrolyte (NK-SDC, LN-SDC and LNK-SDC). It has been found that the contribution of ternary carbonated electrolyte LNK-SDC is a good electrolyte that has acquired the high power density of 484 mW/cm^2 at 570 °C than that of YSZ electrolyte at 1000 C this all has been achieved by applying the NANOCOFC approach and it may also be concluded that the NANOCOFC approach provides a potential electrolyte material for LTSOFCs.

Acknowledgments

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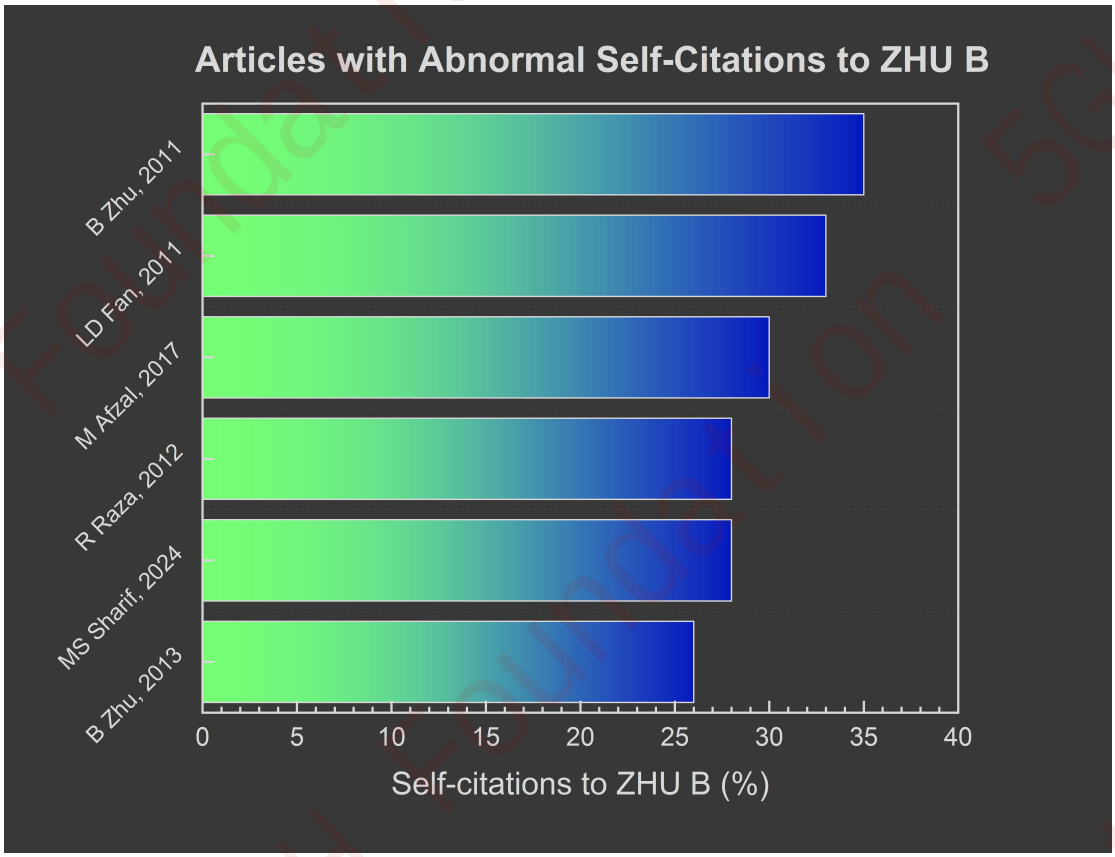
Multiple articles coauthored by ZHU exhibit elevated rates of self-citation (a.k.a.

Citation-from-Themself). The 5GH Team has found 6 articles where self-citations to ZHU's own articles exceed 25% of the total references: B Zhu (2011) [4] with 35% self-citation, LD Fan (2011) [5] with 33% self-citation, M Afzal (2017) [6] with 30% self-citation, MS Sharif (2024) [7] with 28% self-citation, R Raza (2012) [8] with 28% self-citation, and B Zhu (2013) [9] with 26% self-citation. More articles are under investigation.



[1] 5GH-2025-000007.R10
[2] 5GH-2025-000007.R9
[3] 10.1016/j.jallcom.2024.175408
[4] 10.1016/j.ijhydene.2011.04.082
[5] 10.1016/j.jpowsour.2011.12.017
[6] 10.1016/j.ijhydene.2017.05.024
[7] 10.1016/j.ceramint.2024.04.330
[8] 10.1016/j.jpowsour.2011.10.124
[9] 10.1016/j.nanoen.2013.05.001

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