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Jian-Zhang Chen joined the faculty of National Taiwan University in 2007. His current research interests are rapid atmospheric pressure plasma materials processing, supercapacitors, photovoltaics, energy storage devices and systems, oxide materials and devices, and wearable devices.

研究主題

1. 大氣電漿材料製程技術
2. 常壓介電質輝光放電材料製程技術
3. 超級電容
4. 太陽能電池
5. 微流道生醫晶片製程開發
6. 奈米材料能源元件
7. 氧化物電子材料與元件
8. 軟性電子材料及元件

最近代表性期刊論文

1. Jui-Hsuan Tsai, I-Chun Cheng, Cheng-Che Hsu, Chu-Chen Chueh, Jian-Zhang Chen, "Feasibility study of atmospheric-pressure dielectric barrier discharge treatment on $CH_3NH_3PbI_3$ films for inverted planar perovskite solar cells," Electrochimica Acta, accepted.
2. Chia-Chun Lee, Tzu-Ming Huang, I-Chun Cheng, Cheng-Che Hsu, and Jian-Zhang Chen, "Time Evolution Characterization of Atmospheric-Pressure Plasma Jet (APPJ)-Synthesized Pt-SnO_x Catalysts," Metals: Special issue - Plasmas Processes Applied on Metals and Alloys, Metals, vol. 8, 690.
3. **[Invited paper]** Aliyah R. Hsu, Hung-Hua Chien, Chen-Yu Liao, Chia-Chun Lee, Jui-Hsuan Tsai, Cheng-Che Hsu, I-Chun Cheng, Jian-Zhang Chen, "Scan-mode atmospheric-pressure plasma jet processed reduced graphene oxides for quasi-solid-state gel-electrolyte supercapacitors," Coatings, vol. 8, p. 52 (2018).
4. Hung-Hua Chien, Chen-Yu Liao, Yu-Chuan Hao, Cheng-Che Hsu, I-Chun Cheng, Ing-Song Yu, Jian-Zhang Chen, "Improved performance of polyaniline/reduced-graphene-oxide supercapacitor using atmospheric-pressure-plasma-jet surface treatment of carbon cloth," Electrochimica Acta, vol. 260, pp. 391-399 (2018).

5. Chia-Chun Lee, Ting-Hao Wan, Cheng-Che Hsu, I-Chun Cheng, and Jian-Zhang Chen, "Atmospheric-Pressure Plasma Jet Processed Pt/ZnO Composites and its Application as Counter-Electrodes for Dye-Sensitized Solar Cells," Applied Surface Science, vol. 436, pp. 690-696 (2018).
6. Jui-Hsuan Tsai, I-Chun Cheng, Cheng-Che Hsu, Jian-Zhang Chen, "DC-pulse atmospheric-pressure plasma jet and dielectric barrier discharge surface treatments on fluorine-doped tin oxide for perovskite solar cell application," Journal of Physics D: Applied Physics, vol. 51(2), p. 025502 (2018).
7. Ting-Hao Wan, Chia-Chun Lee, Chieh-Wen Chen, Cheng-Che Hsu, I-Chun Cheng, Jian-Zhang Chen, "A comparison study of furnace and atmospheric-pressure-plasma jet calcined Pt-decorated reduced graphene oxides for dye-sensitized solar cell application," Journal of the Electrochemical Society, vol. 164 (13), pp.H931-H935 (2017).
8. Cheng-Han Yang, Chieh-Wen Chen, Yu-Kuan Lin, Yi-Chun Yeh, Cheng-Che Hsu, Yu-Jui Fan, Ing-Song Yu, Jian-Zhang Chen, "Atmospheric-pressure plasma jet processed carbon-based electrochemical sensor integrated with a 3D-printed microfluidic channel," Journal of the Electrochemical Society, vol. 164 (12), pp. B534-B541 (2017).
9. Fei-Hong Kuok, Ken-Yuan Kan, Ing-Song Yu, Chieh-Wen Chen, Cheng-Che Hsu, I-Chun Cheng, Jian-Zhang Chen, "Application of atmospheric-pressure plasma jet processed carbon nanotubes to liquid and quasi-solid-state gel electrolyte supercapacitors," Applied Surface Science, vol. 425, pp.321-328 (2017).
10. Cheng-Han Yang, Fei-Hong Kuok, Chen-Yu Liao, Ting-Hao Wan, Chieh-Wen Chen, Cheng-Che Hsu, I-Chun Cheng, Jian-Zhang Chen, "Flexible reduced graphene oxide supercapacitor fabricated using a nitrogen dc-pulse atmospheric-pressure plasma jet," Materials Research Express, vol. 4, p. 025504 (2017).
11. Fei-Hong Kuok, Chen-Yu Liao, Ting-Hao Wan, Po-Wei Yeh, I-Chun Cheng, Jian-Zhang Chen, "Atmospheric pressure plasma jet processed reduced graphene oxides for supercapacitor application," Journal of Alloys and Compounds, vol. 692, pp. 558-562 (2017).
12. Chang-Han Xu, Yi-Fan Chiu, Po-Wei Yeh, Jian-Zhang Chen, "SnO_2/CNT nanocomposite supercapacitors fabricated using scanning atmospheric-pressure plasma jets," Materials Research Express, vol. 3, p. 085002 (2016).
13. Chang-Han Xu, Po-Yen Shen, Yi-Fan Chiu, Po-Wei Yeh, Cheng-Chuan Chen, Lin-Chi Chen, Cheng-Che Hsu, I-Chun Cheng, Jian-Zhang Chen, "Atmospheric pressure plasma jet processed nanoporous Fe_2O_3/CNT composites for supercapacitor application," Journal of Alloys and Compounds, vol. 676, pp. 469-473 (2016).
14. Jian-Zhang Chen, Ching Wang, Cheng-Che Hsu, I-Chun Cheng, "Ultrafast synthesis of carbon-nanotube counter-electrode of dye-sensitized solar cell using atmospheric-pressure-plasma-jet," Carbon, vol. 98, pp. 34-40 (2016).
15. Chih-Hung Wu, Jian-Zhang Chen, "Ultrafast atmospheric-pressure-plasma-jet processed conductive plasma-resistant Y_2O_3/carbon-nanotube nanocomposite," Journal of Alloys and Compounds, vol. 651, pp. 357-362 (2015).