

Publication(s)

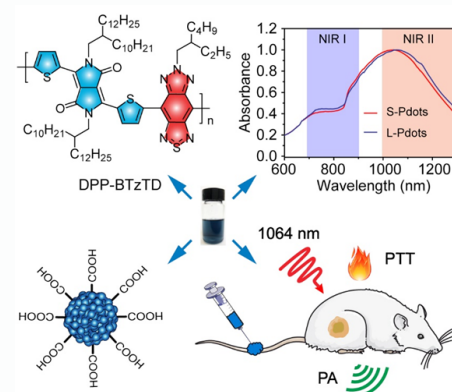
1. Xiang, Y. T., Jin, Y., and Cheung, T. (2020) Joint International Collaboration to Combat Mental Health Challenges During the Coronavirus Disease 2019 Pandemic. *Jama Psychiat* [5yr IF = 17.651]
2. Zhang, W., Xie, R., Zhang, X. D., Lee, L. T. O., Zhang, H., Yang, M., Peng, B., and Zheng, J. (2020) Organism Dual RNA-Seq Reveals the Importance of BarA/UvrY in *Vibrio Parahaemolyticus* Virulence. *Faseb J* [5yr IF = 5.421]
3. Wang, Y. F., Chen, X., Sha, L., Kendrick, K. M., Lee, L. T. O., and Cheng, C. H. K. (2020) Editorial: Neuroendocrine Research in Health and Disease. *Front Neurosci* **14**, 176 [5yr IF = 4.371]
4. Vassiliadis, D., Wong, K. H., Blinco, J., Dumsday, G., Andrianopoulos, A., and Monahan, B. (2020) Adaptation to Industrial Stressors through Genomic and Transcriptional Plasticity in a Bioethanol Producing Fission Yeast Isolate. *G3 (Bethesda)* **10**, 1375-1391 [5yr IF = 3.016]
5. Liu, Y., Wu, P. C., Guo, S., Chou, P. T., Deng, C., Chou, S. W., Yuan, Z., and Liu, T. M. (2020) Low-Toxicity FePt Nanoparticles for the Targeted and Enhanced Diagnosis of Breast Tumors Using Few Centimeters Deep Whole-Body Photoacoustic Imaging. *Photoacoustics* **19** [2018 IF = 5.25]
6. Li, S., Kuok, K. I., Ji, X., Xu, A., Yin, H., Zheng, J., Tan, H., and Wang, R. (2020) Supramolecular Modulation of Antibacterial Activity of Ambroxol by Cucurbit[7]Urils. *Chempluschem* **85**, 679-683 [2018 IF = 3.441]
7. Yang, Y., Wang, C., Xiang, Y. T., Lu, J., and Penzel, T. (2020) Editorial: Mental Disorders Associated with Neurological Diseases. *Front Psychiatry* **11**, 196 [2018 IF = 3.161]

ARTICLE SHARING

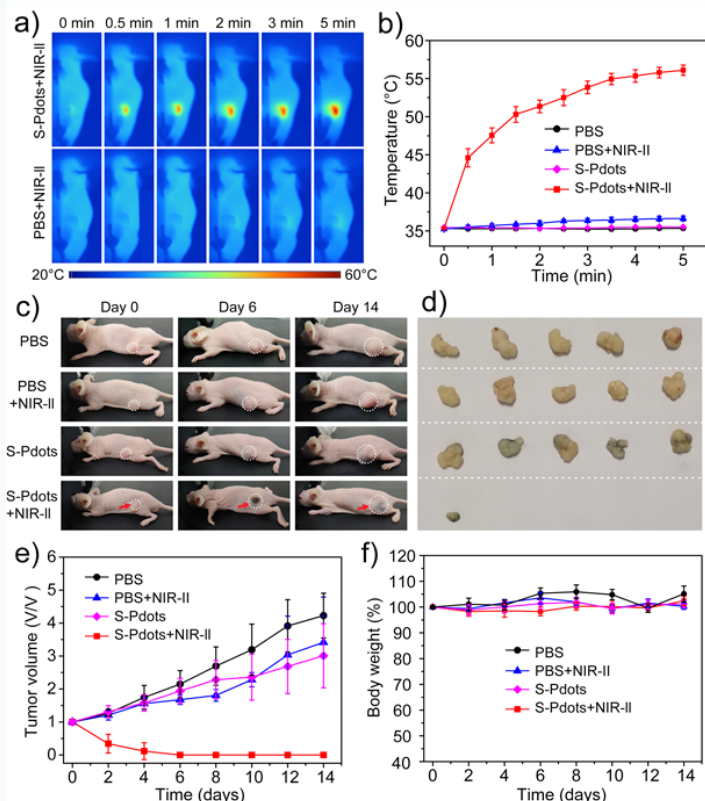
Ultrasmall Semiconducting Polymer Dots with Rapid Clearance for Second Near-Infrared Photoacoustic Imaging and Photothermal Cancer Therapy – Prof. Zhen YUAN

Prof. Zhen YUAN's team has made significant progress in optical molecular imaging and precision medicine for cancer treatment. The team has developed an efficient strategy to prepare ultra-small organic polymer probes for second near-infrared (NIR-II) photoacoustic imaging-guided cancer diagnostic tests and phototherapy. The study titled "Ultrasmall Semiconducting Polymer Dots with Rapid Clearance for Second Near-Infrared Photoacoustic Imaging and Photothermal Cancer Therapy" paves the way for clinical applications of organic semiconductor nanoprobe, and has been published in the authoritative international journal *Advanced Functional Materials* (Impact Factor: 15.621).

Theranostic nanoagents, which incorporate diagnostic and therapeutic capability, have emerged as a promising nanoplatform for cancer detection and treatment. As multifunctional and all-in-one or one-for-all probes, theranostic nanoagents can provide more comprehensive and accurate information for cancer detection and treatment, representing a new trend in nanomedicine for cost-effective precision medicine. Meanwhile, multiscale photoacoustic imaging (PAI) and photothermal therapy (PTT) in NIR-II window (1000–1700 nm) hold great promise for clinical precision medicine for their greater penetration depth and minimal tissue exposure.



Ultrasmall Polymer Probes used in NIR-II cancer phototherapy



Ultrasmall Polymer Probes used in NIR-II cancer photothermal therapy

However, the development of such integrated diagnostic and therapeutic techniques is largely hampered by the lack of metabolisable NIR-II phototheranostic agents.

Prof. YUAN's team constructed a biodegradable NIR-II highly absorbing conjugated polymer dots (Pdots) with rapid clearance for PAI-guided PTT. The unique design of low-bandgap D-A π -conjugated polymer (DPP-BTzTD), together with a modified preparation method, allow the researchers to fabricate Pdots in ultrasmall particle size. Extensive experimental tests have demonstrated that the constructed Pdots exhibit excellent photostability, strong NIR-II absorption, good biocompatibility, bright PA signals, and high photothermal conversion efficiency (53%). In addition, upon tail-vein intravenous injection, Pdots can also ablate tumours efficiently and excrete rapidly through the renal filtration system. In particular, both in vitro and in vivo assays have indicated that the Pdots possess a remarkable PTT performance under the irradiation of a 1,064 nm at 0.5 W cm⁻², which is much lower than its maximum permissible exposure limit of 1 W cm⁻². This pilot study thus paves a novel avenue for the development of organic semiconducting nanoagent for future cancer translation studies. The study was led by Prof. YUAN and his PhD student Xiaojun MEN. It was supported by UM and the Macao Science and Technology Development Fund.

Joint International Collaboration to Combat Mental Health Challenges during the Coronavirus Disease 2019 Pandemic – Prof. Yutao XIANG

Prof. Yutao XIANG called out the global collaboration for fighting the mental health challenges from the COVID-19, and suggested three points for the serious challenges. His article titled “Joint International Collaboration to Combat Mental Health Challenges during the Coronavirus Disease 2019 Pandemic” was highlighted online.

You may enjoy the full text via <https://mp.weixin.qq.com/s/3CYFB1Xs9XNaw9ORbv7IJA>.



April / May 2020				
Mon	Tues	Wed	Thurs	Fri
13 Holiday - Compensatory rest day for the day before Easter	14	15	16	17
20	21	22	23	24
27	28	29	30 Holiday - The Buddha's Birthday	1 May Holiday - Labour Day
4	5	6	7	8