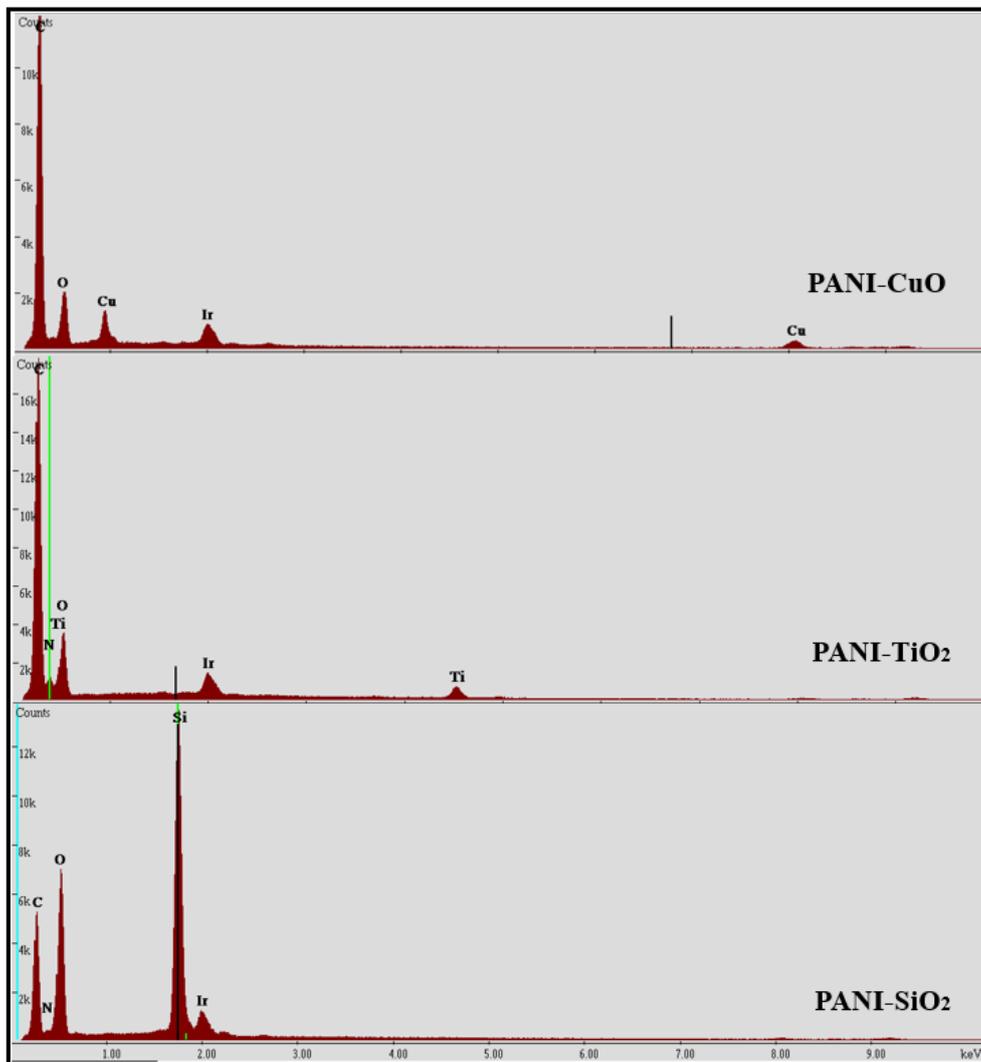


**Figure S1.** Zeta potential of PANI was measured to be about 40.8 mV.



**Figure S2.** SEM-EDS elemental mapping spectra of the PANI-CuO, PANI-TiO<sub>2</sub>, and PANI-SiO<sub>2</sub>.

**Bacterial strains.** *Klebsiella pneumoniae*, ATCC® 700603™ is used as Clinical Laboratory Standards Institute (CLSI) and European Committee on Antimicrobial Susceptibility Testing (EUCAST) positive control for extended-spectrum beta-lactamase ESBL tests [1]. The bacterium is designed as Biosafety Level 2

*Pseudomonas aeruginosa* PAO1 is a derivative of the original Australian PAO isolate. It is the most commonly used strain as its complete genome sequence is known [2]. It has been distributed worldwide to laboratories and strain collections [3].

### References

1. <https://www.atcc.org/search#q=K.%20pneumoniae%20ATCC%20700603&sort=relevancy>
2. Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P; Hickey M.J.; Brinkman, F.S.L.; Hufnagle, W.O.; Kowalik, D.J.; Lagrou, M.; et al. Complete genome sequence of *Pseudomonas aeruginosa* PAO1, an opportunistic pathogen. *Nature* **2000**, *406*, 959–964.
3. <https://www.pseudomonas.com/strain/show/107>.