

Supplementary Information

Carboxylic Acid-Functionalized Conducting-Polymer Nanotubes
as Highly Sensitive Nerve-Agent Chemiresistors

Oh Seok Kwon,^{1,§} Chul Soon Park,^{1,§} Seon Joo Park,^{1,2} Seonmyeong Noh,³ Saerona Kim,³
Hye Jeong Kong,³ Joonwon Bae,⁴ Chang-Soo Lee,^{1,5,*} Hyeonseok Yoon,^{3,6,*}

¹Hazards Monitoring Bionano Research Center, Korea Research Institute of Bioscience and Biotechnology (KRIBB), Daejeon 34141, South Korea

²Center for Integrated Smart Sensors, Daejeon 34141, South Korea

³Department of Polymer Engineering, Graduate School, Chonnam National University, Gwangju 61186, South Korea

⁴Department of Applied Chemistry, Dongduk Women's University, Seoul 02748, South Korea

⁵Nanobiotechnology and Bioinformatics (Major), University of Science & Technology (UST), Daejeon 34141, South Korea

⁶School of Polymer Science and Engineering, Chonnam National University, Gwangju 61186, South Korea

[§]These authors contributed equally to this work

Corresponding Authors:

*E-mail: cslee@kribb.re.kr, hyoon@chonnam.ac.kr

Synthesis of DMTMM

DMTMM provides excellent reaction yields in water as well as alcohol phases for the condensation reaction between carboxylic acid and amine groups. First, 0.75 g of 2-chloro-4,6-dimethoxy-1,3,5-triazine was reacted with 1 g of *N*-methyldmorpholine in 20 mL of tetrahydrofuran (THF) for 30 min. The resulting white precipitates were thoroughly washed with excess THF and then dried. The final product was stored in a freezer under 20 °C.