

二维层状 NiO/g-C₃N₄ 复合材料在无铁光电类芬顿体系中有效去除环丙沙星的研究

贾晓庆¹, 白晓宇¹, 吉喆喆², 李轶^{1,*}, 孙妍², 秘雪岳², 展思辉^{2,*}

¹ 天津大学理学院, 天津 300072

² 南开大学环境科学与工程学院, 天津 300071

Insight into the Effective Removal of Ciprofloxacin Using a Two-Dimensional Layered NiO/g-C₃N₄ Composite in Fe-Free Photo-Electro-Fenton System

Xiaoqing Jia¹, Xiaoyu Bai¹, Zhezhe Ji², Yi Li^{1,*}, Yan Sun², Xueyue Mi², Sihui Zhan^{2,*}

¹ School of Science, Tianjin University, Tianjin 300072, China.

² College of Environmental Science and Engineering, Nankai University, Tianjin 300071, China.

*Corresponding author. Email: liyi@tju.edu.cn; sihuizhan@nankai.edu.cn; Tel.: +86-22-27403475.

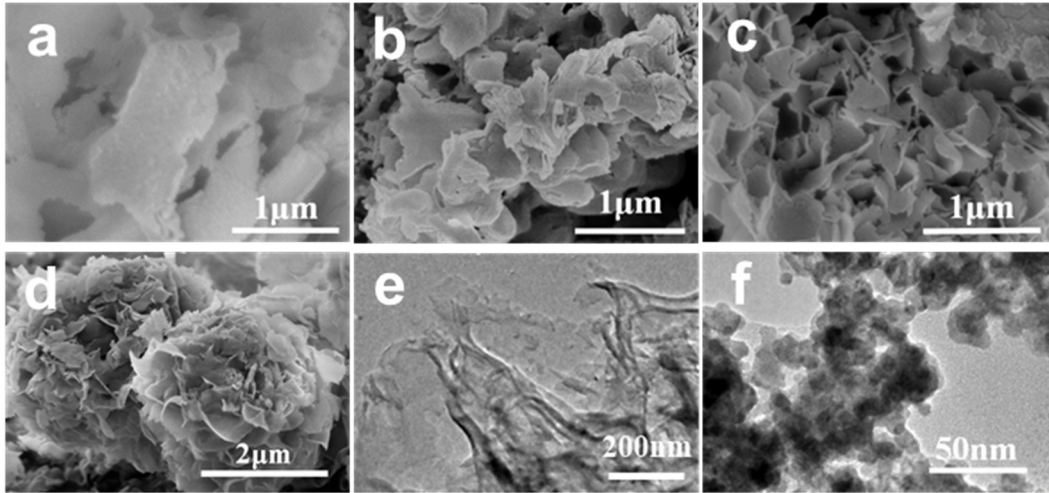


图 S1 (a) g-C₃N₄、(b) NiO、(c-d) NiO/g-C₃N₄-60%的 SEM 图；(e) g-C₃N₄、(f) NiO 的 TEM 图
Fig. S1 SEM of (a) g-C₃N₄, (b) NiO, (c-d) NiO/g-C₃N₄-60%, TEM of (e) g-C₃N₄, (f) NiO.

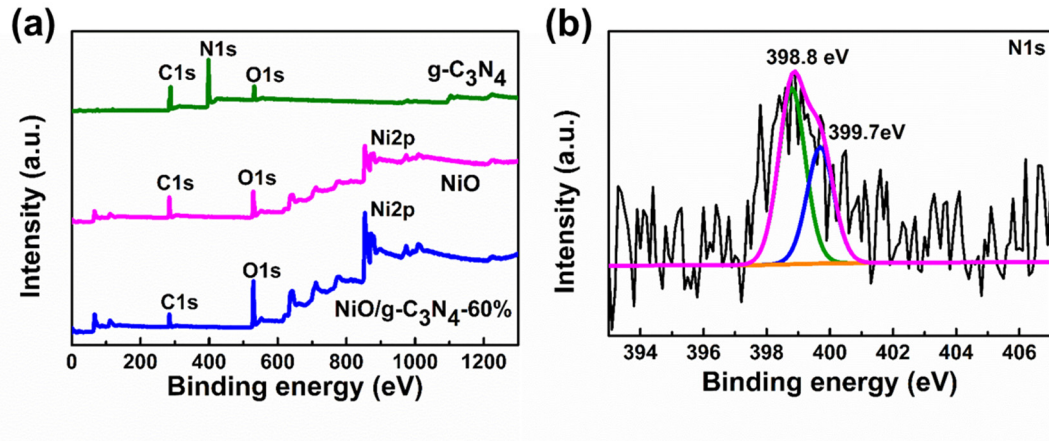


图 S2 (a) NiO/g-C₃N₄-60%、NiO 和 g-C₃N₄ 的 XPS 全谱图；(b) N 1s 的 XPS 谱
Fig. S2 (a) XPS survey of NiO/g-C₃N₄-60%, NiO and g-C₃N₄, (b) XPS spectrum of N 1s.

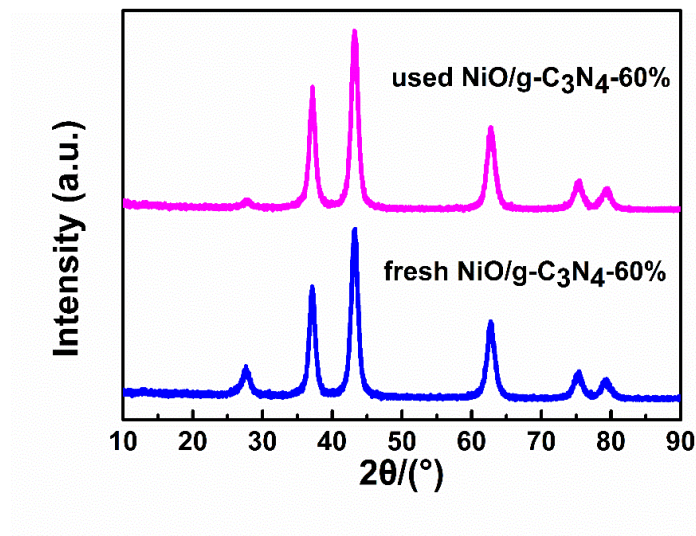
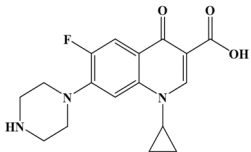
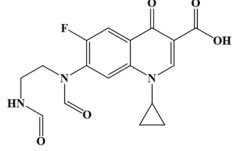
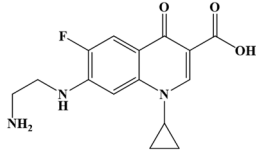
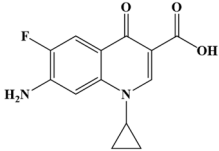
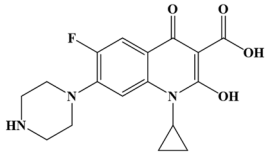
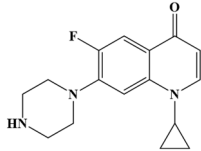


图 S3 降解前后 NiO/g-C₃N₄-60%的 XRD 图
Fig. S3 XRD pattern of NiO/g-C₃N₄-60% before and after reaction.

表 S1 CIP 降解中间体的分子结构和 m/z 值

Table S1 The intermediates produced in the degradation of CIP process.

Compounds	Molecular formula	Structural formula	m/z
CIP	$C_{17}H_{18}FN_3O_3$		332
A	$C_{17}H_{15}FN_3O_5$		362
B	$C_{15}H_{16}FN_3O_3$		306
C	$C_{13}H_{11}FN_2O_3$		263
D	$C_{17}H_{18}FN_3O_4$		348
E	$C_{16}H_{18}FN_3O$		288