Electronic Supplementary Information for

Photoelectrocatalytic properties and mechanism of rhodamine B degradation using a graphene oxide/Ag_3PO_4/Ni film electrode

Di Zhao*, Fu-Cai Dai, Ai-Chang Li, Yu Chen, Gui-Hua Li, Qian Wang, Wen-Shuo Hou and Hong-Zhi Zhou

Faculty of Chemistry and Material Science, Langfang Normal University, Langfang 065000, China

*Di Zhao, email: zhaodi@lfnu.edu.cn

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Preparation of GO/Ag_3PO_4/Ni film electrodes

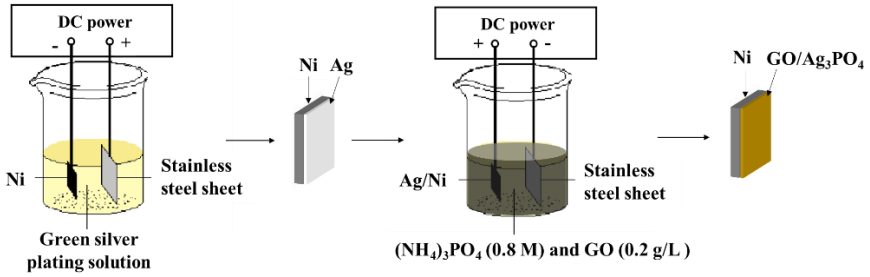

Fig.S1 The flow chart of GO/Ag_3PO_4/Ni thin film electrode prepared by electrochemical method

PEC degradation measurements

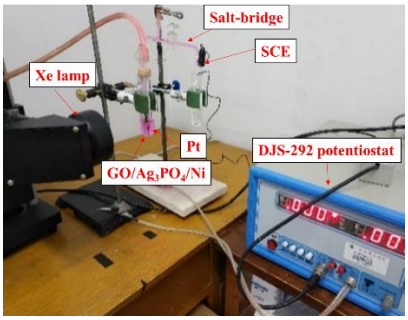

Fig. S2 Digital photograph of the PEC degradation experimental setup

PEC stability

XRD patterns of the new and the used GO/Ag_3PO_4/Ni thin films after PEC degradation for 3 hours and 6 hours are shown in Fig.5. Compared with curve b and a, the peak positions of the two spectra are the same and the peak intensities are similar. And the peak intensity of metallic Ag in curve b is not enhanced. This result shows that the crystal structure of the GO/Ag_3PO_4/Ni film has no obvious change after 3 hours of PEC degradation. The curve c shows that the characteristic diffraction peaks of Ag_3PO_4 is widened, and the intensity is weakened, some characteristic peaks even disappear, and some peak positions deviate. At the same time, the intensity of metallic Ag is obviously enhanced. This result shows that the crystal structure and composition of the GO/Ag_3PO_4/Ni film have changed significantly after 6 hours of PEC degradation.

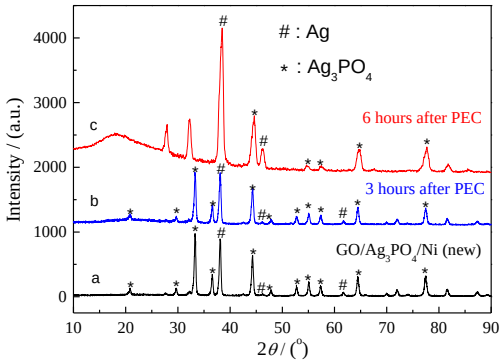

Fig. S3 XRD patterns of the new and used GO/Ag_3PO_4/Ni thin films after PEC degradation for 3 and 6 hours, respectively