TriDo-Former: A Triple-Domain Transformer for Direct PET Reconstruction from Low-Dose Sinograms (Supplementary Material)

A. Clinical Diagnosis Experiment of GFP

To further prove the advantages of GFP, we compared the results of the proposed model with and w/o GFP in the downstream clinical diagnosis experiment. The model w/o GFP achieves 86.7% classification accuracy, which is 1.9% lower than the model with GFP, verifying the crucial role of GFP in enhancing the clinical significance of the reconstructed images.

B. Spectrum Analysis of GFP

We analyzed the 2D spectrum and the 1D power spectrum of the images reconstructed by the model with GFP (i.e., Proposed) and the model w/o GFP (i.e., w/o GFP). As shown in Fig. S1 and Fig. S2, the high frequency parts of images reconstructed by the model with GFP are more similar to those of SPET images, qualitatively and quantitatively prove the contribution of GFP in avoiding frequency distortions and preserving high-frequency details.

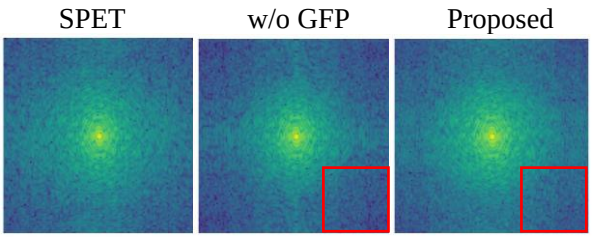

Fig. S1. The 2D spectrum of reconstructed images generated by model with GFP (Proposed) or the model w/o GFP (w/o GFP).

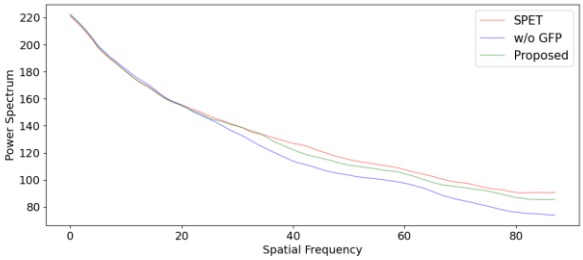

Fig. S2. The 1D power spectrum of reconstructed images generated by model with GFP (Proposed) or the model w/o GFP (w/o GFP).