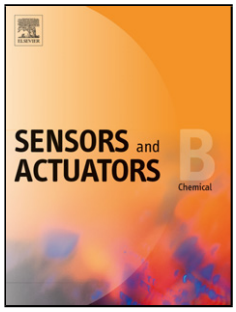

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Research Highlights

- The gas sensor based on GO-rambutan-like polyaniline hollow nanosphere hybrid loaded on PET flexible substrate was developed for NH_3 detection at room temperature.
- The sensor utilizing 0.5wt.% GO-PANIHs (GPA0.5) showed the highest response of 31.8 to 100 ppm NH_3 and the low detection limit of 50 ppb at room temperature.
- The present fabricated sensor also exhibited the acceptable response and recovery characteristics, repeatability and excellent selectivity to NH_3 at room temperature.
- The improved sensing performance was attributed to the morphology structure and synergistic effect of PANIHs and GO.