

## 2D/2D NiTi-LDH/BiOBr photocatalyst with extraordinary NO<sub>x</sub> removal under visible light

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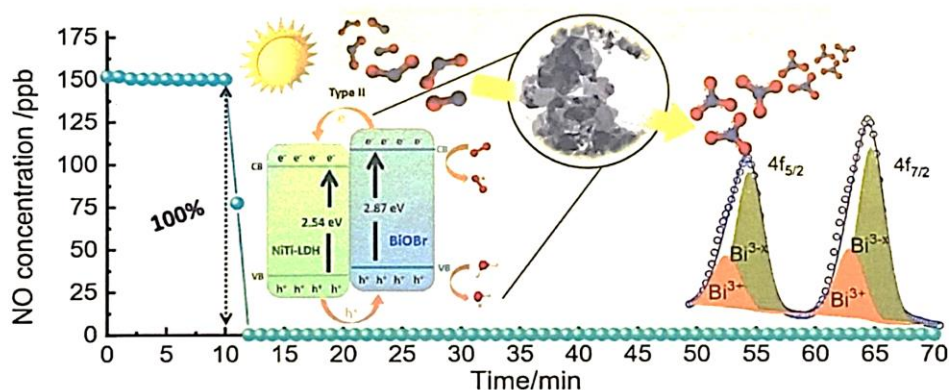
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Many current studies are focused on the development of 2D/2D nanosystems based on non-traditional semiconductors as efficient visible light-active photocatalysts, due to their interesting structural and optical properties [1]. Thus, the charge-separation in heterostructures can be enhanced by boosting the interfacial contact [2]. In this work, robust 2D/2D NiTi/BiOBr composites have been prepared by incorporating a 2D layered BiOBr into NiTi-layered double hydroxides (LDH) for the subsequent study of their photocatalytic action in the control of NO<sub>x</sub> pollution. The successful formation of a type-II heterojunction between both semiconductors has been confirmed by several characterization techniques (including XPS, NMR and electrochemical studies), indicating an intimate contact interface that helps enhance the visible light photocatalytic performance of NiTi-LDH. In particular, the NiTi-LDH/BiOBr-0.6 heterojunction, with a more efficient separation of photoinduced carriers, showed exceptional NO removal efficiency under visible light and remarkable robustness for the recycling process.



### References

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- [2] J. Fragoso, A. Pastor, M. Cruz-Yusta, F. Martín, G. de Miguel, I. Pavlovic, M. Sánchez, L. Sánchez, *Appl. Cat. B Environ.*, **2023**, *322*, 122115.