

Supplementary Information for:

**Ni²⁺-activated MgTi₂O₅ with broadband emission beyond 1200
nm for NIR-II light source applications**

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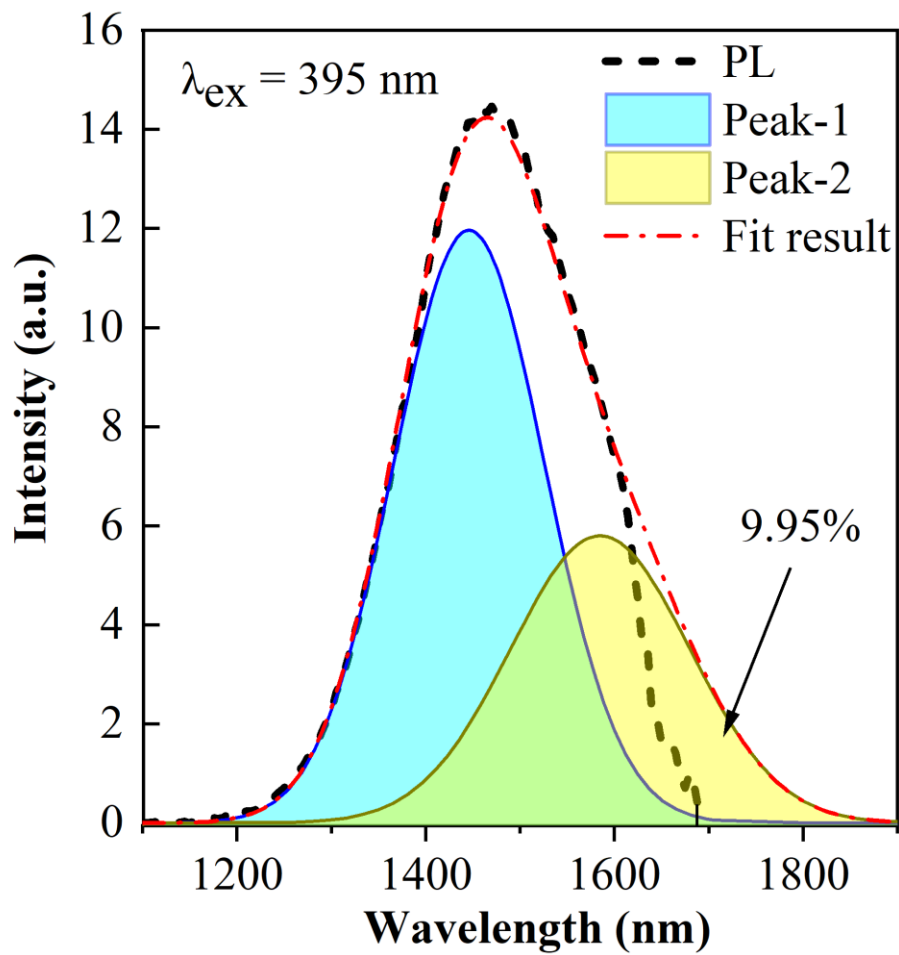


Figure S1. PL spectra of MgTi₂O₅:0.5%Ni²⁺ fitted by Gauss formula.

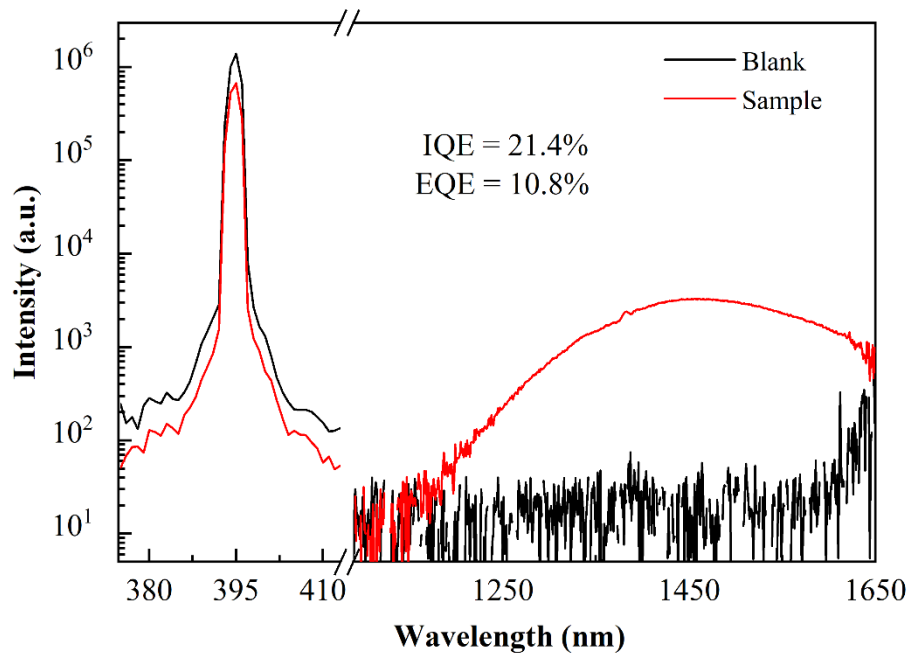


Figure S2. IQE and EQE of MgTi₂O₅:0.5%Ni²⁺ excited by 395 nm.

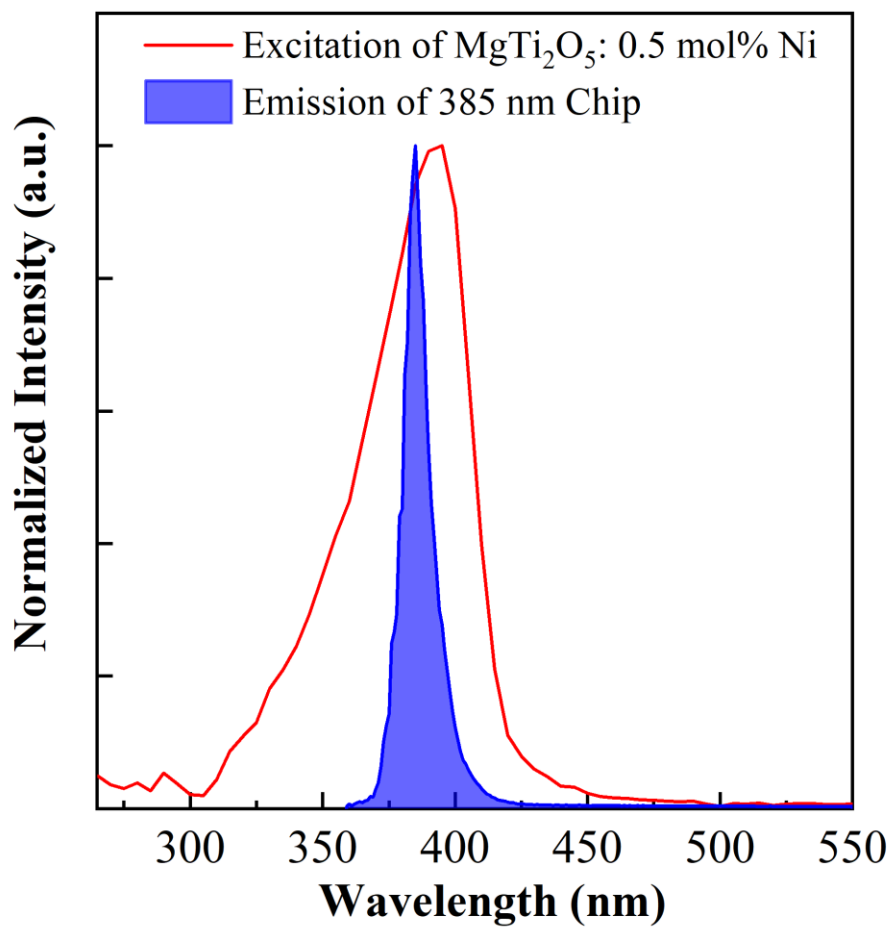


Figure S3. Good overlap exists between the excitation of MgTi₂O₅:0.5%Ni²⁺ and the emission of 385 nm LED chip.

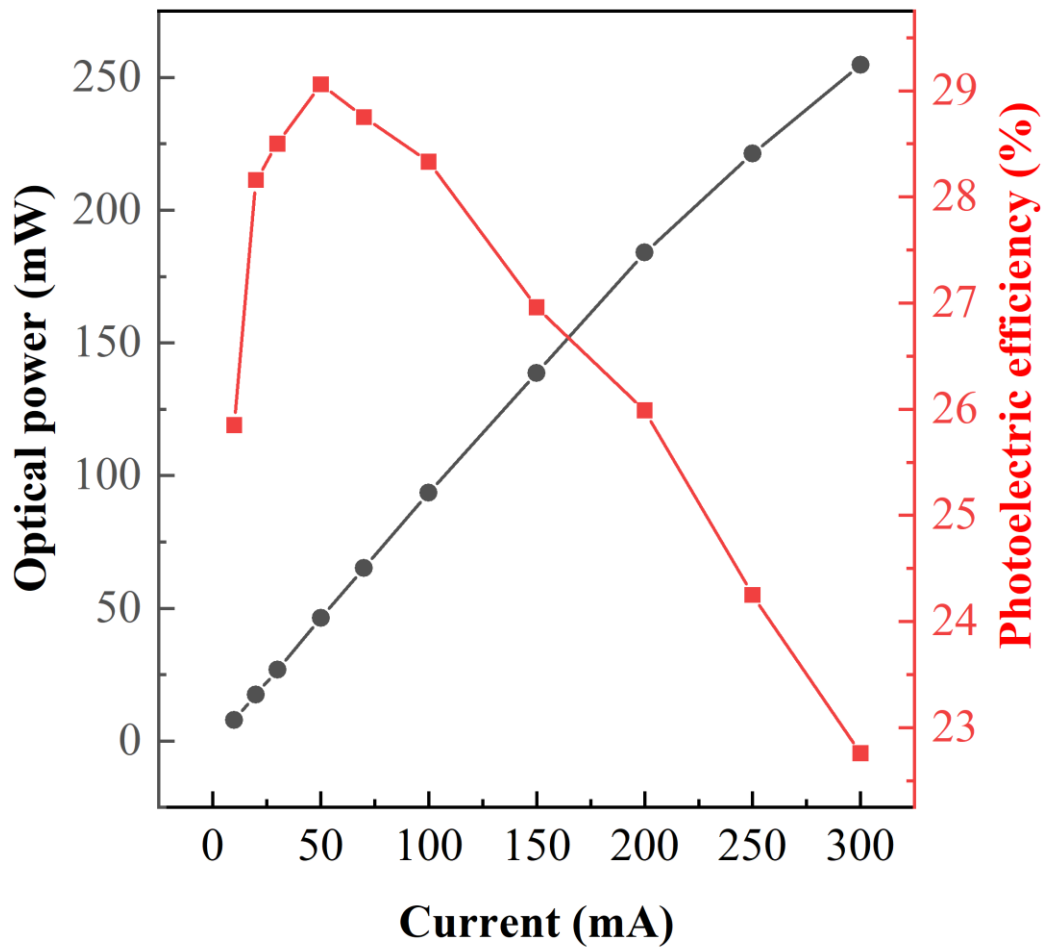


Figure S4. Output optical power and photoelectric efficiency of the 385 nm LED chip depending on the driving current.

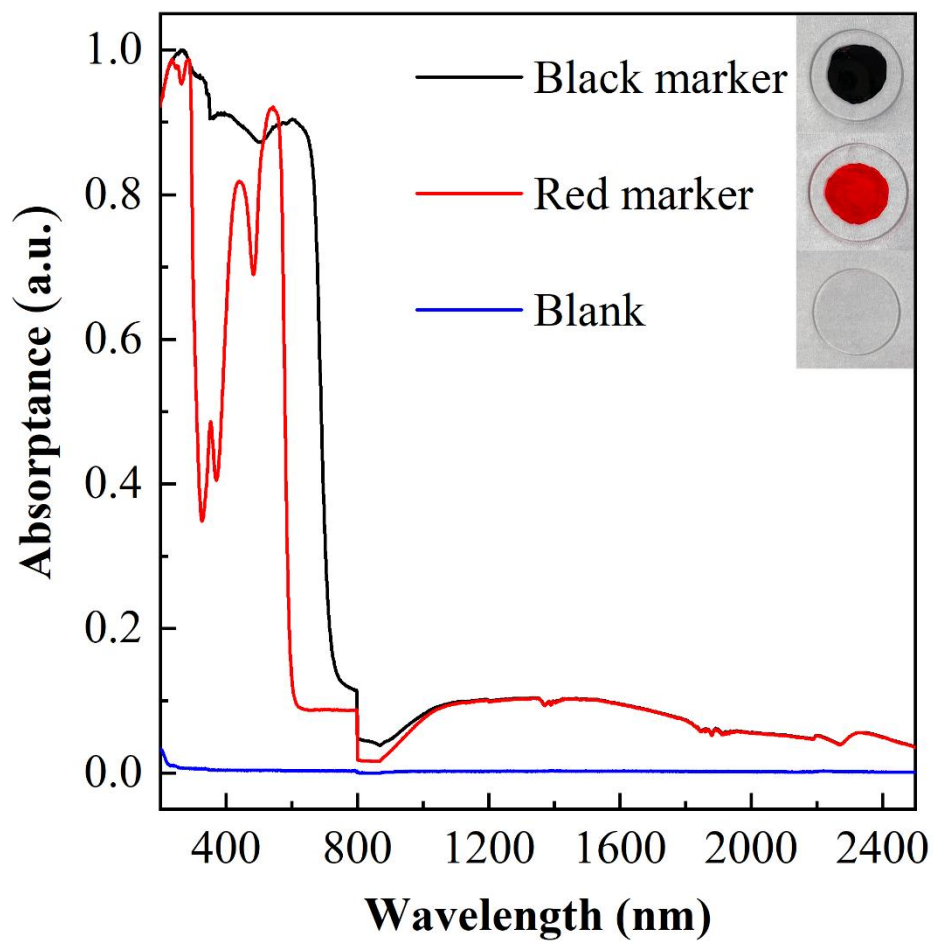


Figure S5. Absorption spectra of the black and red marker ink. Note the blank sample is quartz glass .