

Supporting Information

Ni@C/PPy composites derived from Ni-MOF materials for efficient microwave absorption

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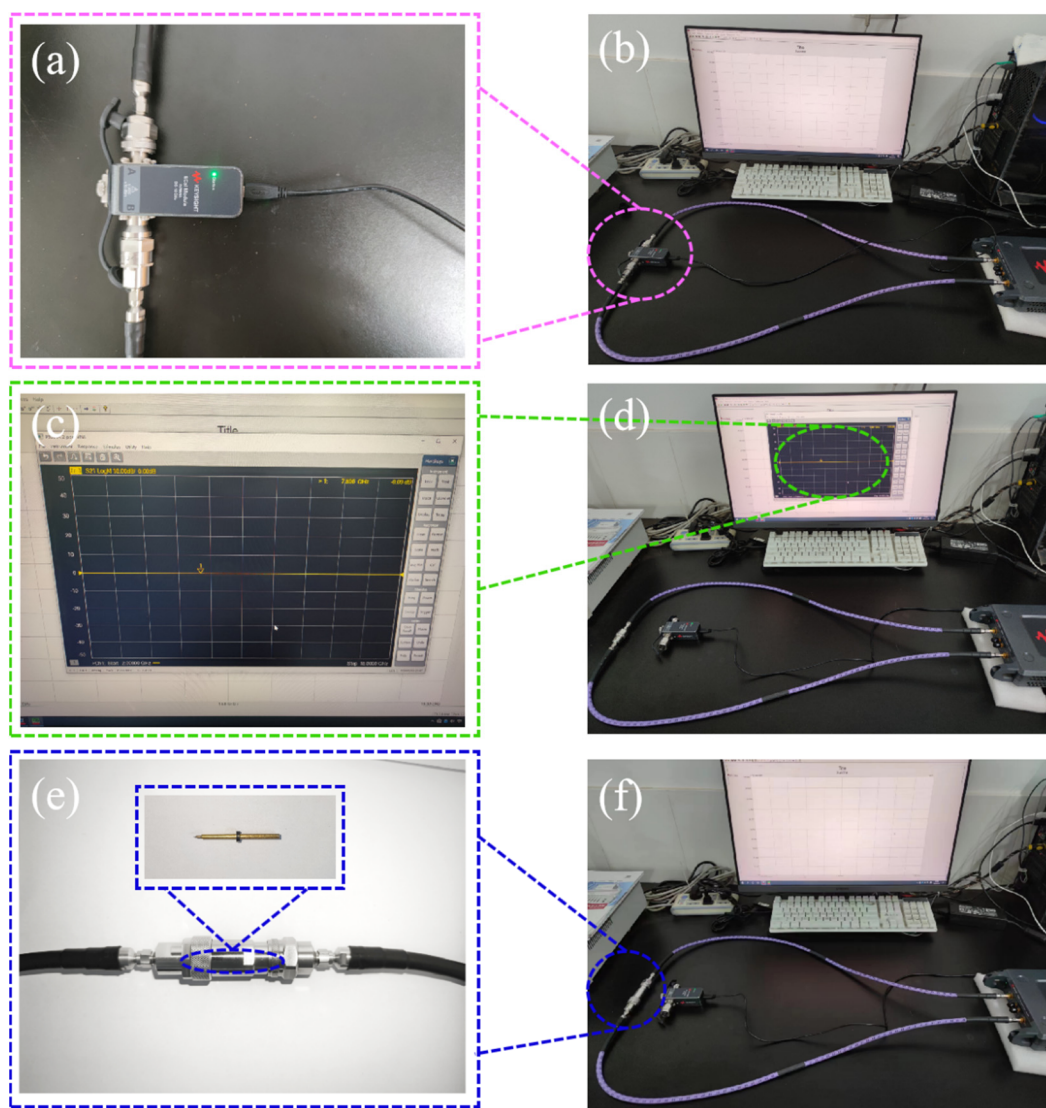


Figure S1. The calibration (a–d) and testing (e, f) process. (a) The ECal module N7554A; (c, d) After a careful calibration, $S_{21} = 0$ without the sample loading; (e) The coaxial air-line loaded with the sample.

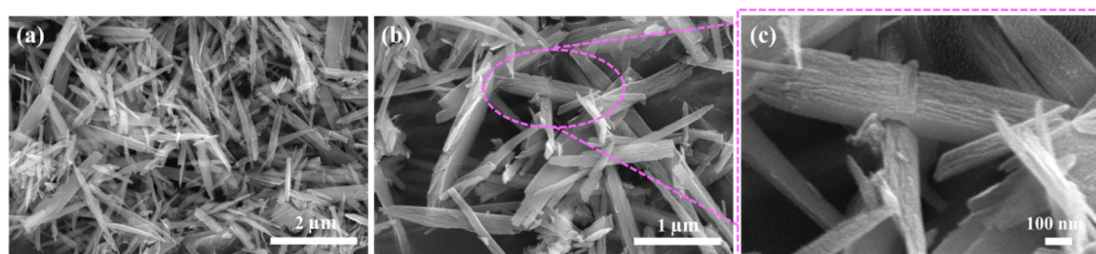


Figure S2. SEM diagram of Ni-MOF particles.

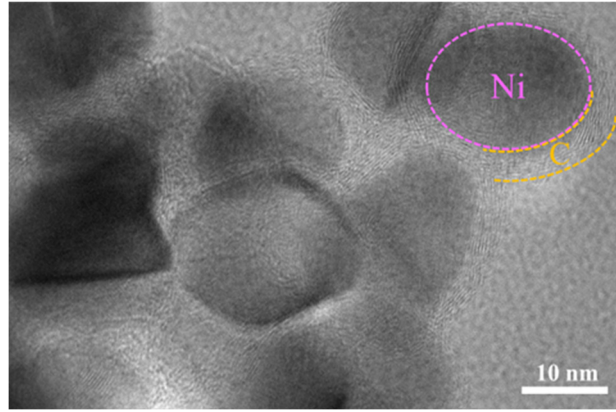


Figure S3. TEM view of Ni@C composite.

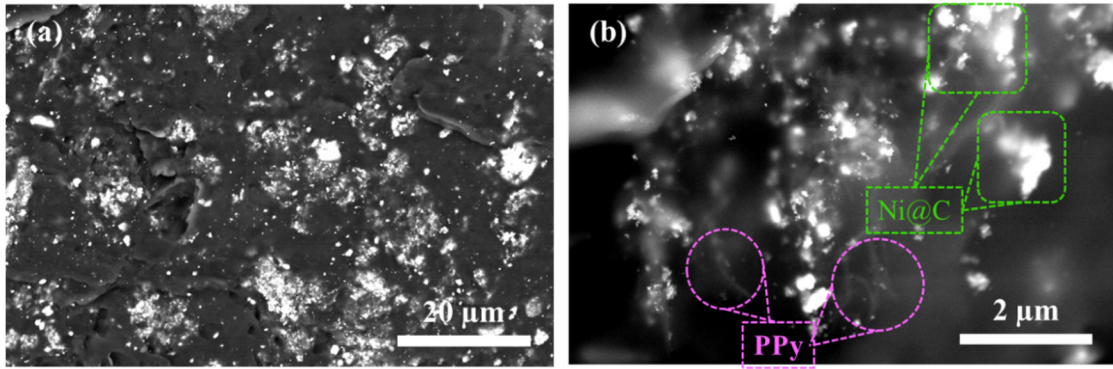


Figure S4. SEM of annular samples mixed with Ni@C/PPy powder and paraffin matrix at a 15 wt% filling ratio.

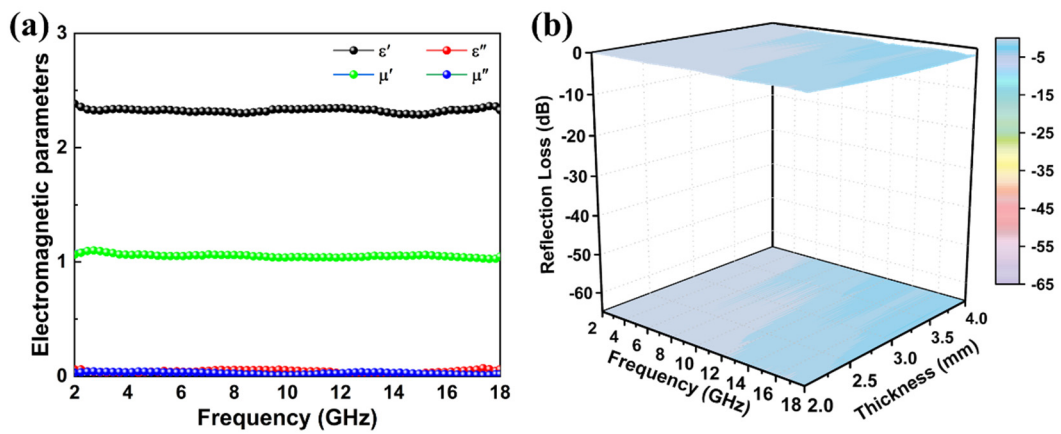


Figure S5. Electromagnetic parameters (a) and reflection loss (b) plots versus frequency for pure paraffin.

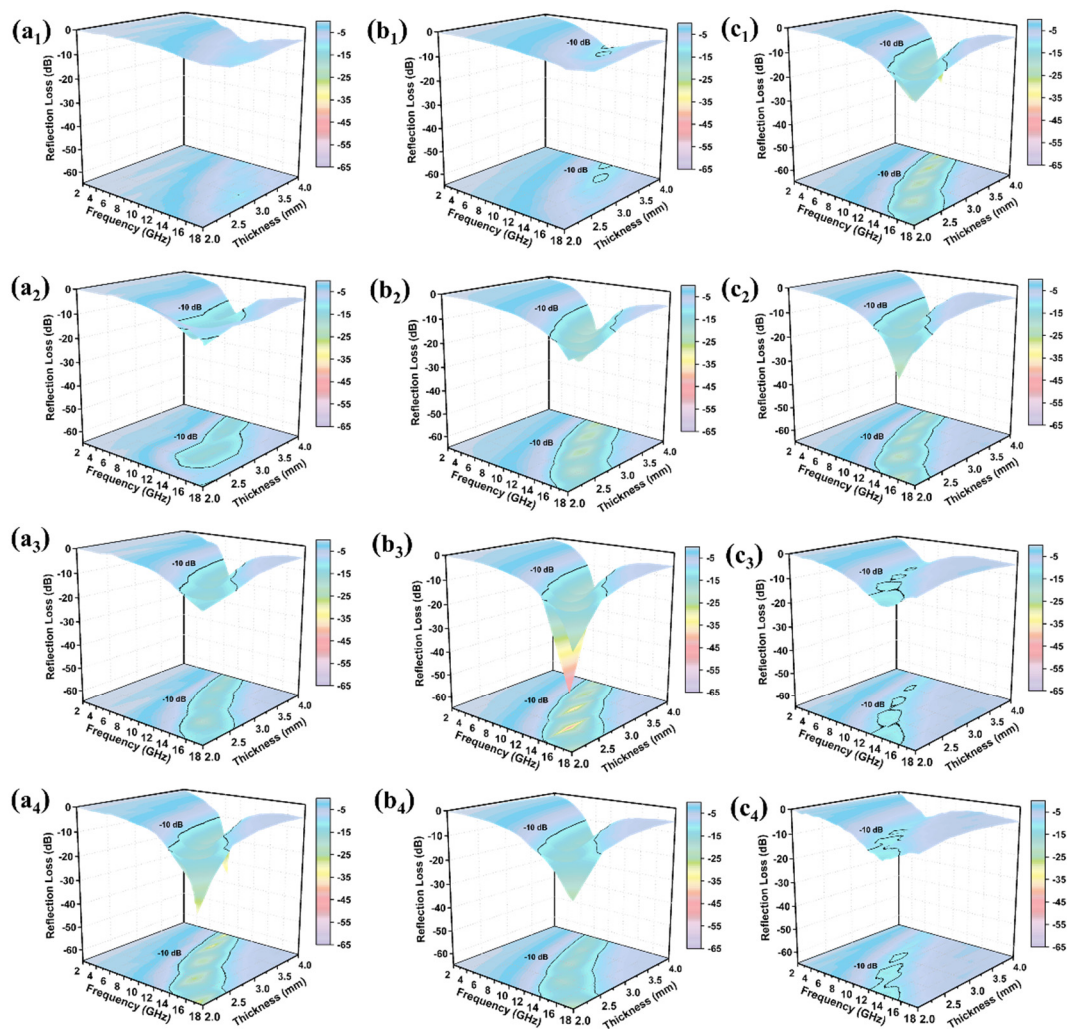


Figure S6. The reflection loss of Ni@C/PPy-1 (a₁, b₁, c₁), Ni@C/PPy-2 (a₂, b₂, c₂), Ni@C/PPy-3 (a₃, b₃, c₃) and Ni@C/PPy-4 (a₄, b₄, c₄) with a filling rate of 10 wt% (a₁-a₄), 15 wt% (b₁-b₄) and 20 wt% (c₁-c₄).

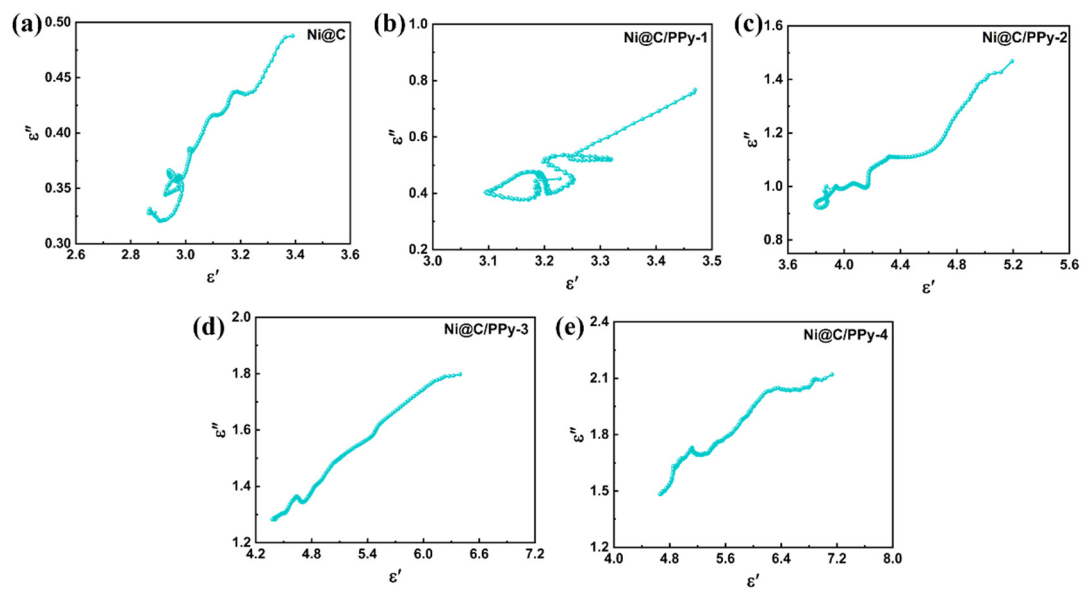


Figure S7. The Cole-Cole curves of Ni@C (a), Ni@C/PPy-1 (b), Ni@C/PPy-2 (c), Ni@C/PPy-3 (d) and Ni@C/PPy-4 (e).