Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting information

Highly selective photocatalytic oxidation of 5-hydroxymethylfurfural by interfacial Pt-O bonding Pt-Ov-BiOBr

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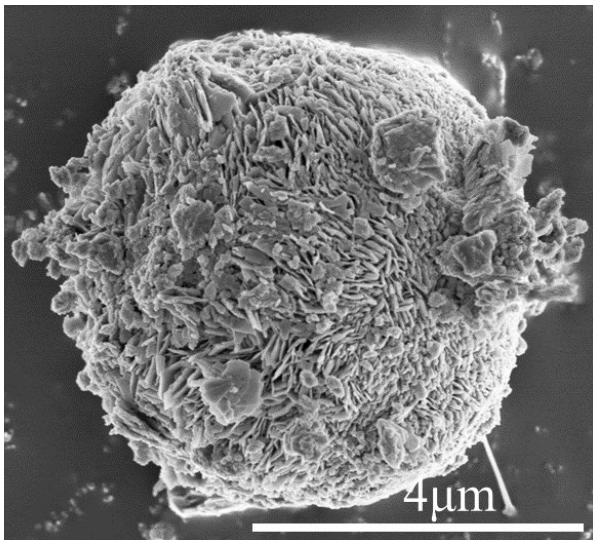

Fig. S1 SEM diagrams of Ov-BiOBr

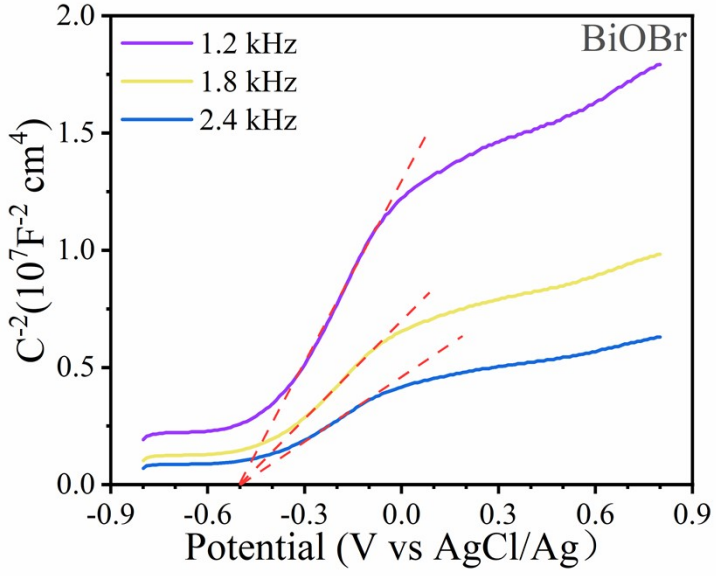

Fig. S2 Motschottky curve of BiOBr

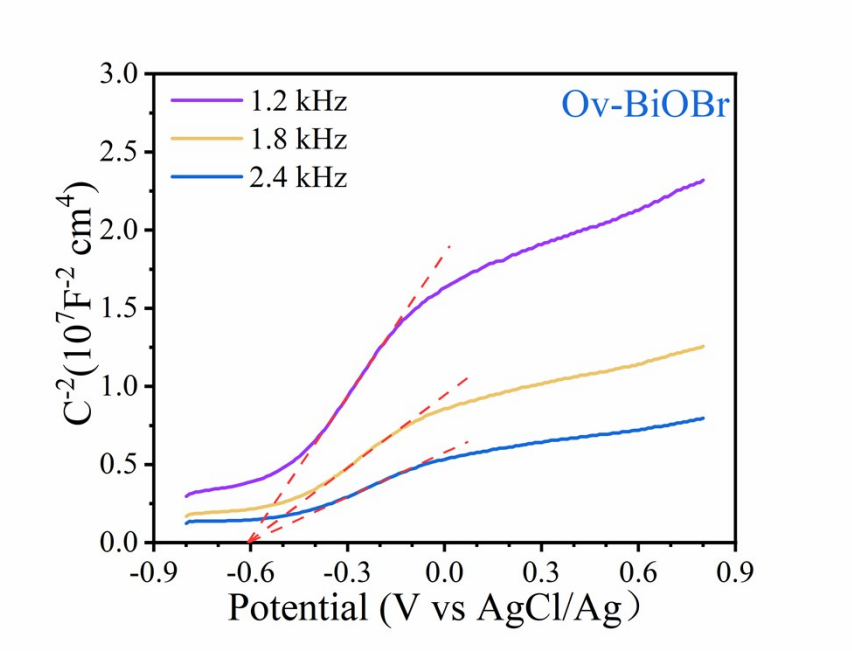

Fig. S3 Motschottky curve of Ov-BiOBr

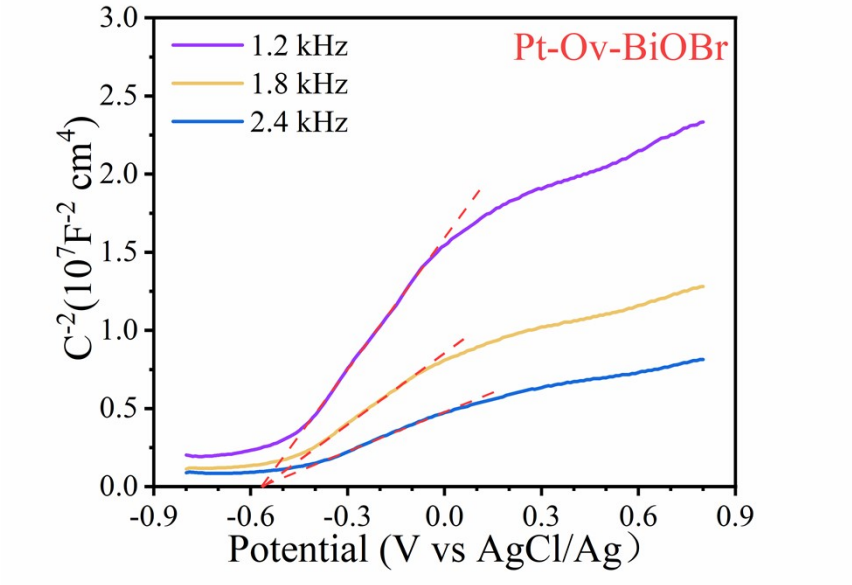

Fig. S4 Motschottky curve of Pt-Ov-BiOBr

The band edge positions of catalysts. can be calculated using the following equation:

$$E_{CB}\,(V\ vs.\ NHE) = E_{fb}(V\ vs.\ AgCl/Ag) + 0.197 - X$$ ------Eq. s1

$$E_{VB} = E_{CB} + E_g$$ ----- Eq. s2

Where E_{VB} and E_{cB} stand for the valence band edge potential and conduction band edge potential, respectively; $E_{AgCl/Ag}$=0.197V (saturated potassium chloride) vs. NHE; X is the voltage difference between the conduction band value and the flat potential value, generally 0.1-0.2 eV (the conduction bands of n-type semiconductors are normally 0.1-0.2 eV deeper than the flat-band potential). Therefore, the conduction band position is obtained by subtracting 0.3eV from the potential of each flat band.

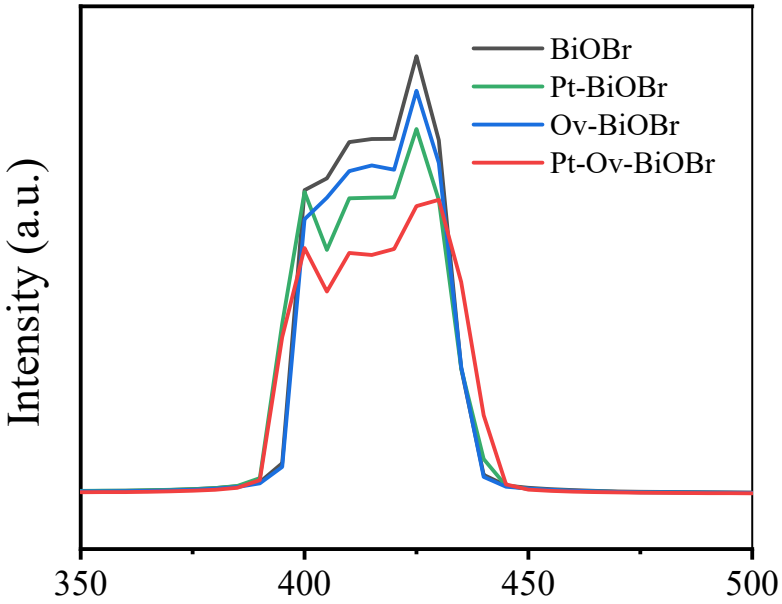

Fig. S5 PL atlas of different samples

Table S1 XPS ratio of each sample

Sample	Ov ratio	$Bi^{(3-x)+}$ ratio	Pt^{2+} ratio
Pt-BiOBr			12.8
Ov-BiOBr	24.29	5.16	
Pt-Ov-BiOBr	32.6	11.82	25.9