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CORRECTION

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Correction: Hybrid d^0 and d^{10} electronic configurations promote photocatalytic activity of high-entropy oxides for CO_2 conversion and water splitting

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Correction for 'Hybrid d^0 and d^{10} electronic configurations promote photocatalytic activity of high-entropy oxides for CO_2 conversion and water splitting' by Jacqueline Hidalgo-Jiménez *et al.*, *J. Mater. Chem. A*, 2024, **12**, 31589–31602, https://doi.org/10.1039/D4TA04689G.

The authors regret that in the original article, the scale bars in Fig. 4b and 5a were incorrect. The authors also regret errors in the orientation of the atomic planes in Fig. 6e. Additionally, the range of the *X*-axis in Fig. 9a was twice as large as the correct value, and two numbers in Table 3 were incorrectly shown as 12 and 2.95 instead of the correct values, 0.2 and 6.6. These unintentional errors do not affect any other data or the conclusions of the manuscript. The correct Fig. 4–6, 9 and Table 3 are as shown here.

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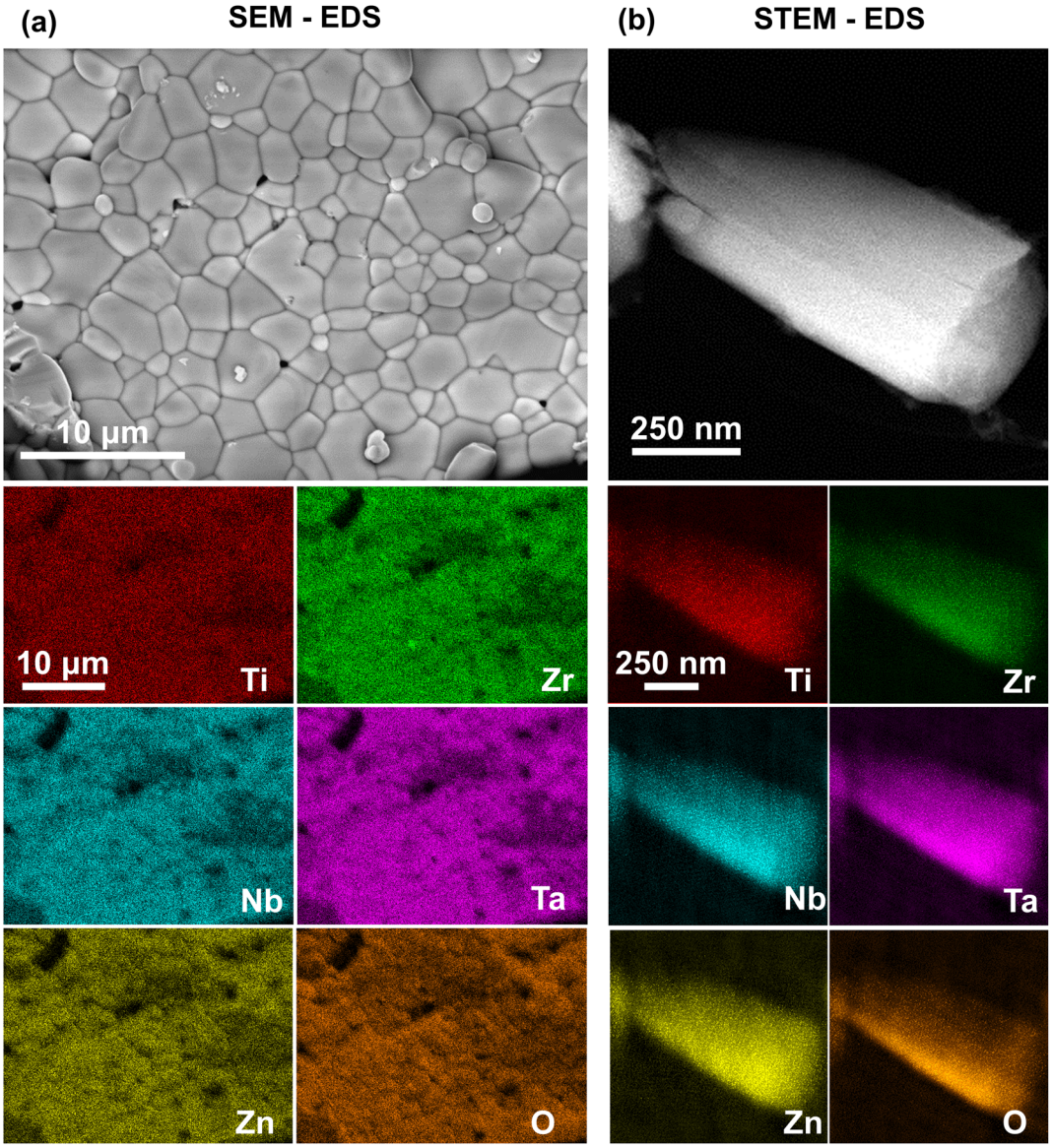

Fig. 4 Homogeneous distribution of elements at the micrometer and nanometer scales in high-entropy oxide $TiZrNbTaZnO_{10}$. (a) SEM-EDS and (b) STEM-EDS mappings.

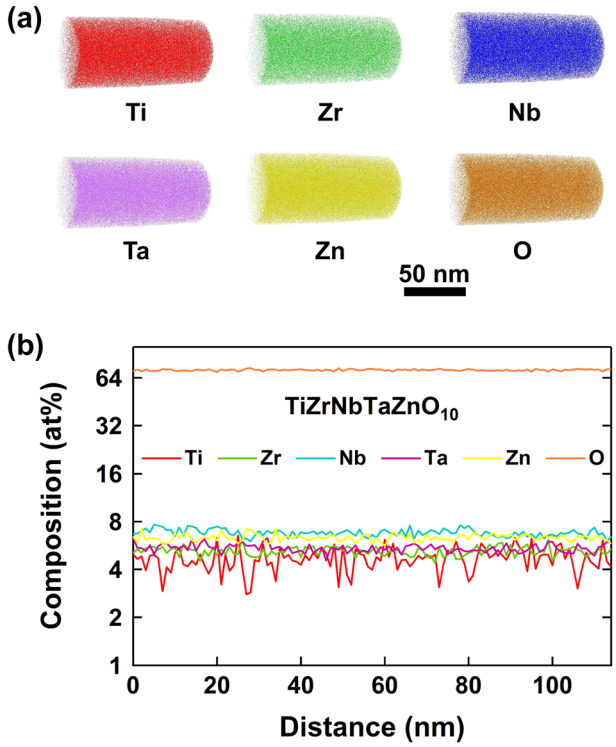

Fig. 5 Homogeneous distribution of elements at the atomic scale in high-entropy oxide $TiZrNbTaZnO_{10}$. (a) Three-dimensional chemical composition distribution and (b) percentage of elements along the sample tip.

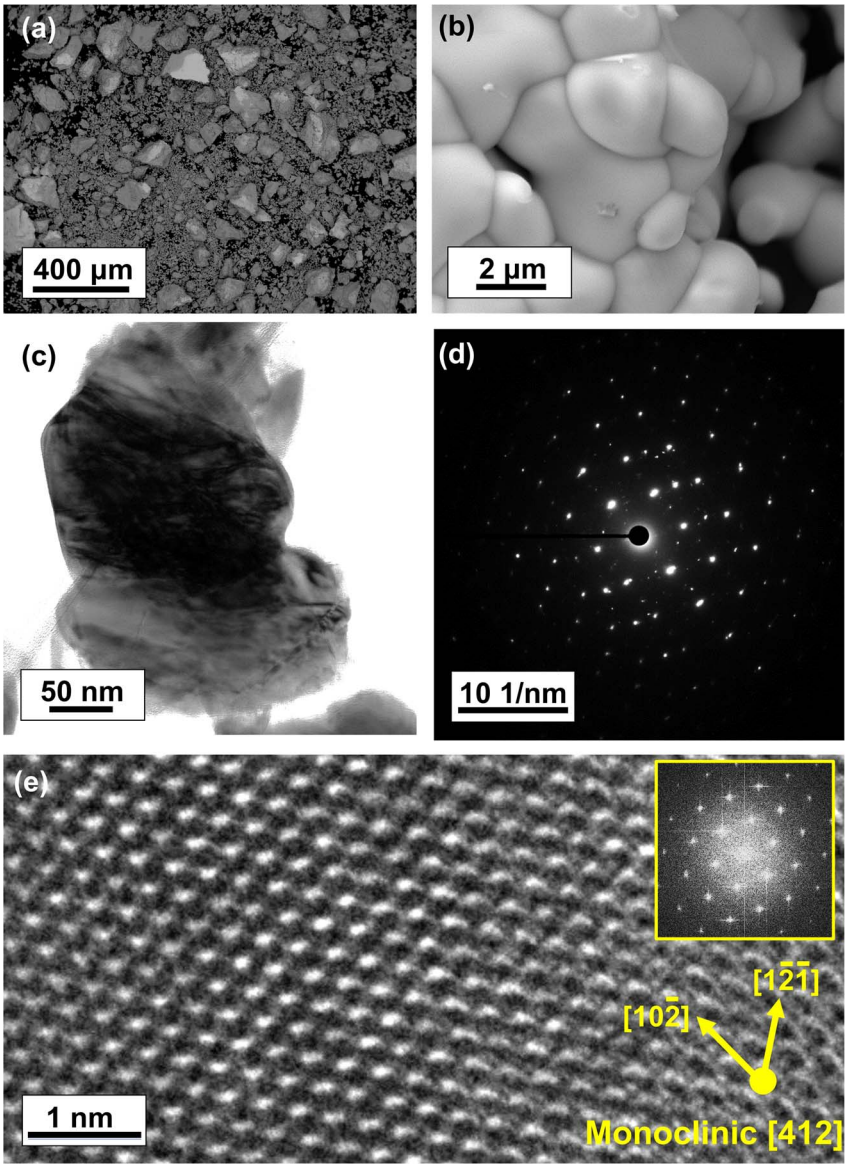

Fig. 6 Formation of micro-sized particles with a monoclinic structure in high-entropy oxide $TiZrNbTaZnO_{10}$. (a and b) SEM micrographs at different magnifications, (c) TEM bright-field micrograph, (d) SAED pattern, and (e) high-resolution image and corresponding fast Fourier transform.

Table 3 Catalyst mass, catalyst surface area, light source, rate of CO_2 conversion and amount of hydrogen production for several binary oxides, composites and high-entropy photocatalysts compared with $TiZrNbTaZnO_{10}$

Photocatalyst	Mass (mg)	Surface area ($m^2\ g^{-1}$)	Light source	CO_2 conversion ($\mu mol\ hg^{-1}$)		CO_2 conversion ($\mu mol\ hm^{-2}$)		Water splitting ($mmol\ hg^{-1}$)	Water splitting ($mmol\ hm^{-2}$)	Ref.
				CO	CH_4	CO	CH_4	H_2	H_2	
TiO_2 anatase	50	13.5	300 W Xe					0.3189	0.47	39
TiO_2 (HPT, ~70% columbite)	50	0.1	300 W Xe					0.005	1.08	39
TiO_2 (HPT and anneal)	100 mg	6.8	300 W Hg	1.39		0.15				49
ZnO (HPT)	50							0.585	0.45	48
CeO_{2-x}	50	20.5	300 W Xe	1.68		0.081				50
Nb_2O_5/TiO_2	100	57.3	200 W Xe					0.18	10.31	46
S dopped Ta_2O_5-CdS	5	0.017	300 W Xe					0.2725	16.03	51
MnCo/CN			300 W Xe	47						52
$Cd_{1-x}Zn_xS$	45	119	100 W LED	2.9	0.22	0.096	0.01			57
$TiZrHfNbTaO_{11}$	100/50	0.089	400 W Hg/300 W Xe	4.6	—	5.16	—	0.0361	0.2	4 and 10
$TiZrHfNbTaO_{11}$ (mechano-thermal synthesis)	50	3	300 W Xe					0.027	134.76	54
$TiZrHfNbTaO_{11}$ (laser crushing)	100	2.69	400 W Hg	50	200	1.66	6.66			24
$TiZrHfNbTaO_6N_3$	100/50	2.3	400 W Hg, 300 W Xe	11.6	—	0.5	—	0.0319	0.006	11 and 17
$Ce_{0.2}Zr_{0.2}La_{0.2}Pr_{0.2}Y_{0.2}O_2$	2	61.4	11 W UV					9.2	0.0002	12
$ZrYCeCrO_2$-based + 38 at% Ca		—	150 W Xe					0.415		13
$Li(NbVTaCrMoWCo)O_3$	50	11.19	300 W Xe, 420 nm cutoff filter					6.61	0.29	15
(Co, Mn, Ni, Zn)O-metal organic framework	10		300 W Xe					13.24		16
$Ce_{0.2}Zr_{0.2}La_{0.2}Pr_{0.2}Y_{0.2}O_2$	2	61.4	11 W UV					9.2	0.0002	12
$(Ga_{0.2}Cr_{0.2}Mn_{0.2}Ni_{0.2}Zn_{0.2})_3O_4$	20	16.71	300 W Xe	23.01	2.89	0.03	0.65			8
Cu-$(Ga_{0.2}Cr_{0.2}Mn_{0.2}Ni_{0.2}Zn_{0.2})_3O_4$	20	42.08	300 W Xe	5.66	33.84	0.002	0.02			19
$(NiCuMnCoZnFe)_3O_4$	30	66.48	—	15.89	8.03	0.007	0			20
$TiZrNbTaZnO_{10}$	100/50	0.03	400 W Hg/300 W Xe	25.2	9.9	761.3	301	0.2	6.6	This study

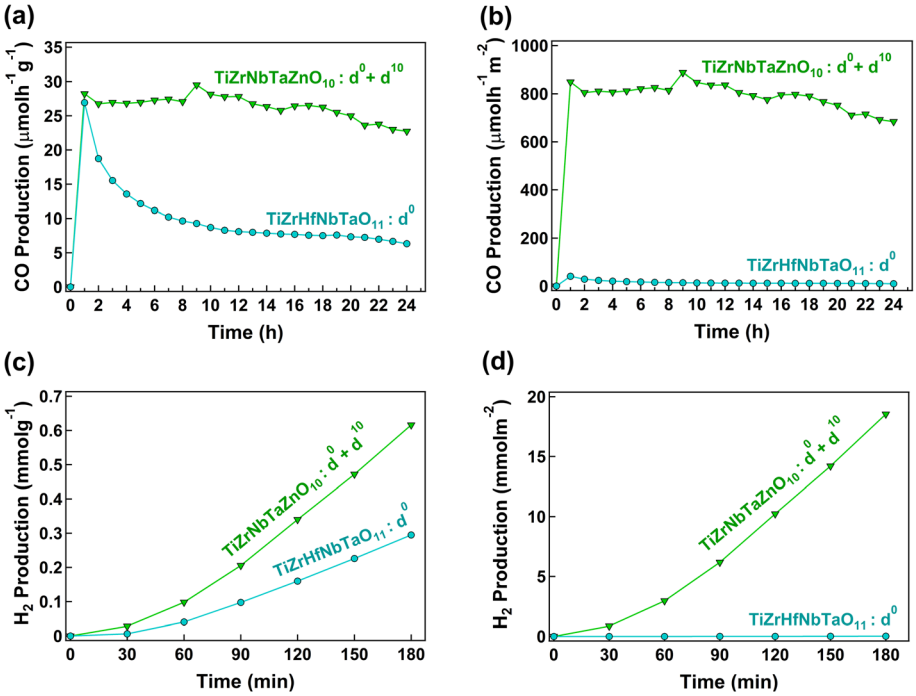

Fig. 9 Enhancement of the photocatalytic activity of high-entropy oxide $TiZrNbTaZnO_{10}$ compared to $TiZrHfNbTaO_{11}$ due to the mixed d^0 and d^{10} electronic configuration. CO_2 to CO conversion rate per (a) unit mass and (b) surface area of the two catalysts. H_2 production from water splitting per (c) unit mass and (d) surface area of the two catalysts.

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.