Perovskite-based photoelectrochemical investigations for artificial photosynthesis

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Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof.dr.ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op dinsdag 21 januari 2025
klokke 10:00 uur

door

Tirong Guo

geboren te Hubei, China
in 1993

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Financial support was provided by the China Scholarship Council (CSC) and the EU project SUN2CHEM.

For my sweet family,

my dear friends,

and the brave hearts.

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List of Abbreviations

NPS	natural photosynthesis
APS	artificial photosynthesis
PEC	photoelectrochemical
H_2	hydrogen
AM 1.5G	air mass 1.5 global
HER	hydrogen evolution reaction
OER	oxygen evolution reaction
CB	conduction band
VB	valence band
CBM	conduction band minimum
VBM	valence band maximum
CDW	charge density wave
SCR	space charge region
e^-	electron
h^+	hole
E_F	Fermi level energy
QFL	quasi Fermi level
$E_{QF,n}$	quasi Fermi level energy of electrons
$E_{QF,p}$	quasi Fermi level energy of holes
E_c	energy of conduction band minimum

E_v	energy of valence band maximum
E_g	band gap energy
XRD	X-ray diffraction
FWHM	full width at half maximum
SEM	scanning electron microscope
EDX	energy-dispersive X-ray spectroscopy
CV	cyclic voltammetry
LSV	linear sweep voltammetry
OCP	open circuit potential
EIS	Electrochemical impedance spectroscopy
RC	Randles circuit
M-S	Mott-Schottky
WE	working electrode
CE	counter electrode
RE	reference electrode
RHE	reversible hydrogen electrode
FTO	fluorine-doped tin oxide
BBO	$Ba_2Bi_2O_6$
BBNO	$Ba_2Bi_{1.4}Nb_{0.6}O_6$
BLBO	$Ba_2La_{0.4}Bi_{1.6}O_6$
BBTO	Ba_2BiTaO_6