Supporting Information

Searching for active binary rutile oxide catalyst for water splitting

from first principles

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Table S1. The differential adsorption energy of O atom ($\delta G(O)$) for RuNiO₂ and

	RuNiO ₂		RuCoO ₂	
	DFT	DFT+U	DFT	DFT+U
1/3MLO	-0.29	-0.33	-0.68	-0.65
2/3MLO	-0.42	-0.50	-0.58	-0.58
1MLO	-0.48	-0.39	-0.50	-0.47
4/3MLO	0.28	0.25	0.44	0.44

RuCoO₂ from DFT and DFT+U calculations (Unit: eV)



Figure S1. Total density of states of (a) RuNiO₂ and (b) RuCoO₂ from DFT and

DFT+U calculations.