Journal Name

ARTICLE

Bismuth-doped $La_{1.75}Sr_{0.25}NiO_{4+\delta}$ as novel cathode material for solid oxide fuel cells

Received 00th January 20xx,
Accepted 00th January 20xx

DOI: 10.1039/x0xx00000x

www.rsc.org/

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Supporting Information

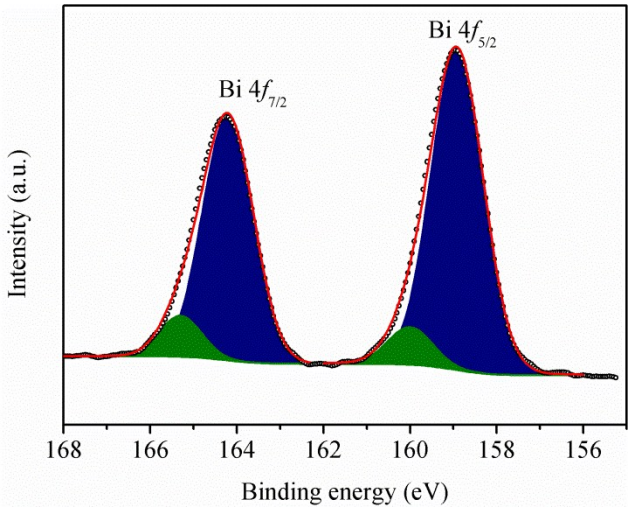

Figure S1. Experimental and deconvoluted Bi 4*f* XPS spectra of LSN-Bi. The blue and green peaks denote the contributions from Bi^{3+} and Bi^{5+}, respectively. The red line gives the fitted envelope of both components. Binding energies and relative intensities are given in Table S1.

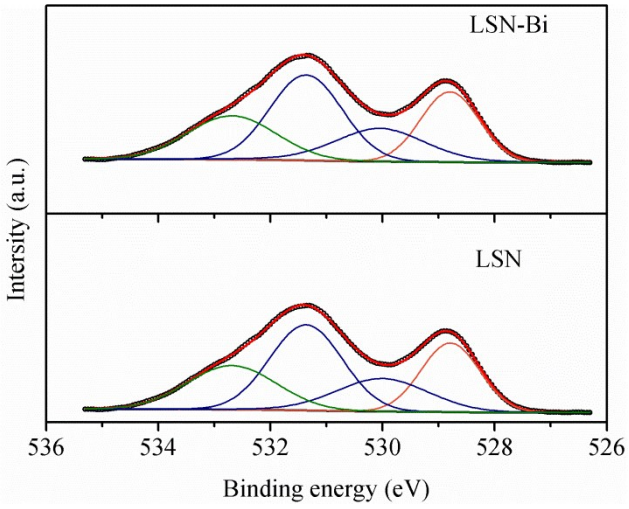

Figure S2. Experimental and deconvoluted O 1*s* XPS spectra for LSN and LSN-Bi. The red line gives the fitted envelope of all four components. Binding energies and relative intensities are given in Table S2.

Table S1. Binding energies (BE) and relative intensities for the Bi 4*f* region of LSN-Bi. Intensities are relative to the intensity of the envelope of both components.

	BE (eV)	Relative Intensity (%)	BE (eV)	Relative Intensity (%)
	Bi^{3+}		Bi^{5+}	
Bi $4f_{5/2}$	158.90	91.1	160	8.9
Bi $4f_{7/2}$	164.20	87.8	165.30	12.2

Table S2. Binding energies (BE) and relative intensities for the O 1*s* region of LSN and LSN-Bi. Intensities are relative to the intensity of the envelope of all four oxygen species.

	LSN		**LSN-Bi**	
Oxygen species	BE (eV)	Relative Intensity (%)	BE (eV)	Relative Intensities (%)
O^{2-}	528.79	23.3	528.80	23.6
O_2^{2-}/O^-	530.01	18.2	530.05	18.7
OH	531.36	35.86	531.36	35.41
H_2O	532.69	22.58	532.69	22.23