

Supporting Data

EDS data

Table 1: Weight percentage of elements of composites $(1-x)\text{SmBT}-x\text{SmCF}$ ($x = 0.00, 1.0, 0.02, 0.04, 0.06$).

Element	Weight % SmBT	Weight % SmCF	Weight % SmBT-SmCF (0.02)	Weight % SmBT-SmCF (0.04)	Weight % SmBT-SmCF (0.06)
O K	20.41	25.74	20.52	20.62	20.73
Ti K	20.35	-	19.94	19.54	19.13
Sm K	9.5	9.07	9.49	9.48	19.47
Fe K	-	45.04	0.90	1.80	2.7
Co K	-	20.15	0.40	0.81	1.21
Ba L	49.64	-	48.65	47.65	46.66

Raman Spectra

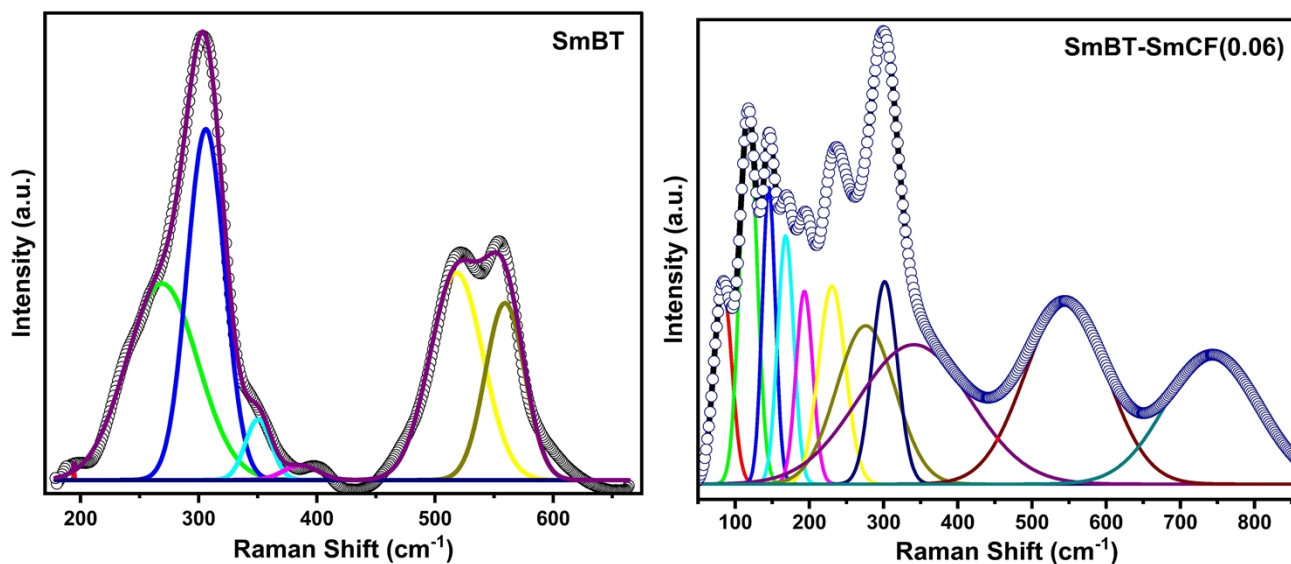


Figure 1: Deconvoluted Raman spectra of composite $(1-x)\text{SmBT}-x\text{SmCF}$ ($x=0.00, 0.06$).

X-ray photoelectron spectroscopy

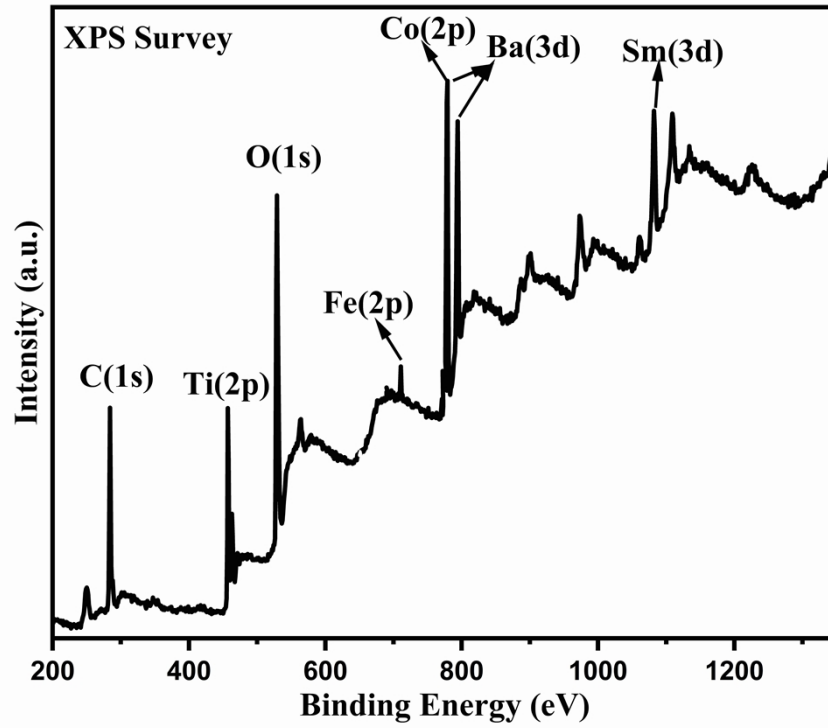


Figure 2: XPS survey spectrum of $(1-x)\text{SmBT}-x\text{SmCF}$.

Table 2: XPS peak positions and FWHM values of $(1-x)\text{SmBT}-x\text{SmCF}$.

Element Name	Levels	Fitted peak position (eV)	FWHM (eV)
Ba 3d	$3d_{5/2}$, $3d_{3/2}$	794.81, 779.45	3.24
Ti 2p	$2p_{3/2}$, $2p_{1/2}$	457.9, 463.71	2.45
Sm 3d	$3d_{5/2}$, $3d_{3/2}$	1083.08, 1109.43	2.13
Co 2p	$2p_{3/2}$, $2p_{1/2}$	779.7, 796.4	3.20
Fe 2p	$2p_{3/2}$, $2p_{1/2}$	710.5, 733.4, 724.6	3.31
O 1s	1s	529.38, 532.24	1.20