GLOSSARY

λ	-	wavelength
θ	-	incident angle
δ	-	phase angle
γ	-	shear rate
ε	-	strain
η	-	viscosity
χ	-	interaction parameter
σ	-	stress
ρ	-	specific gravity
τ	-	tortuosity factor
Υ	-	shear rate
k	-	viscosity index
E_a	-	activation energy
R	-	universal gas constant
T	-	absolute temperature
α	-	extension ratio

d	-	interlamellar spacing
V_r	-	volume fraction of rubber
F	-	weight fraction of the filler
ρ_r	-	specific gravity of rubber
ρ_s	-	specific gravity of solvent
v	-	crosslink density
n	-	pseudoplastic index
δ_p	-	solubility parameter of polymer
η_o	-	zeroshear viscosity
Φ_1	-	volume fraction of component 1
Φ_2	-	volume fraction of component 2
τ_s	-	yield stress
tpa	-	tonne per annum
nm	-	nanometer
μm	-	micrometer
meq/g	-	milliequivalents per gram
σ	-	surface charge density
S	-	specific surface of the layered silicate
e	-	elementary charge, 1.6022×10^{-19} C
a	-	unit cell parameter
L/h	-	aspect ratio
ν (Si-O)	-	Si-O stretching vibration
δ (Si-O)	-	Si-O bending vibration,
ABS	-	acrylonitrile butadiene styrene
ATH	-	aluminium trihydride
AZO	-	aluminum-doped zinc oxide

BGNF	-	bioactive glass nanofiber
BNNT	-	boron nitride nanotube
BZC	-	basic zinc carbonate
CEC	-	cation exchange capacity
CVD	-	chemical vapor deposition
CVI	-	chemical vapor infiltration
DMTA	-	dyanamic mechanical thermal analysis
DSC	-	differential scanning calorimetry
DTG	-	differentiation of the thermogravimetric curve
DRC	-	dry rubber content
DPNR	-	deproteinized natural rubber
ECM	-	extra cellular matrix
ENR	-	epoxidized natural rubber
EVA	-	ethylene vinyl acetate
FTIR	-	fourier transform infrared
HFIP	-	hexafluoro-2-isopropyl alcohol
HNBR	-	hydrogenated accrylo nitrile-butadiene rubber
HPMC	-	hydroxy propyl methyl cellulose
MA	-	maleic anhydride
MB	-	melt blend
Na-MMT	-	sodium montmorillonite
OMMT	-	organic montmorillonite
PACN	-	poly (acrylonitrile)
PANI	-	poly (aniline)
PC	-	polycarbonate
PDDA	-	polydimethyl diallyl ammonium

PE	-	poly ethylene
PEEK	-	poly (aryl- ether- ether- ketone)
PET	-	poly (ethylene terephthalate)
PLGA	-	poly (glycolic acid)
PNC	-	polymer nanocomposites
PP	-	polypropylene
PPS	-	poly (phenylene sulfide)
PVC	-	poly vinyl chloride
PVD	-	physical vapor deposition
PVP	-	poly (vinylpyrrolidone)
SEM	-	scanning electron micrograph
SF	-	silk fibroin
SP/SA	-	superior processing grades
SWNCT	-	single walled carbon nanotubes
TEM	-	transmission electron microscopy
TEOS	-	tetraethyl orthosilicate
TGA	-	thermogravimetric analysis
TPNR	-	thermoplastic natural rubber
TPO	-	thermoplastic olefin
TSR	-	technically specified rubber
UHV	-	ultra-high vacuum
XRD	-	X- ray diffraction
XPS	-	X-ray photo electron spectroscopy
ZDC	-	zinc diethyl dithiocarbamate
ZMBT	-	zinc mercapto benzthiasole