



(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic>)

### Patent Search

Invention Title	A POLY TRIMETHYLENE TEREPHTHALATE NANOCOMPOSITE FORMULATION AND A METHOD THEREOF
Publication Number	31/2019
Publication Date	02/08/2019
Publication Type	INA
Application Number	201841003767
Application Filing Date	01/02/2018
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	POLYMER TECHNOLOGY
Classification (IPC)	C08L101/00, C08K7/06

#### Inventor

Name	Address	Country
Aswathi M.K	International and Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Priyadarsini Hill (PO), Kottayam, Kerala, 686 560, India	India
Ajitha A.R	International and Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Priyadarsini Hill (PO), Kottayam, Kerala, 686 560, India	India
Sabu Thomas	International and Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Priyadarsini Hill (PO), Kottayam, Kerala, 686 560, India	India
Nandakumar Kalarikkal	International and Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Priyadarsini Hill (PO), Kottayam, Kerala, 686 560, India	India
M. Padmanabhan	International and Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Priyadarsini Hill (PO), Kottayam, Kerala, 686 560, India	India
Lovely P. Mathew	International and Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Priyadarsini Hill (PO), Kottayam, Kerala, 686 560, India	India

#### Applicant

Name	Address	Country	Nation
Mahatma Gandhi University	Priyadarsini Hills P.O., Kottayam - 686 560, Kerala, India	India	India

#### Abstract:

The present invention mainly relates to polymer based nanocomposite. In one embodiment, the present invention relates to a method of fabricating poly trimethylene terephthalate based nanocomposite formulation for EMI Shielding, the method comprising: adding poly trimethylene terephthalate (PTT) into a mixer at a temperature of 230°C for 3 minutes, adding multiwalled carbon nanotubes in to the poly trimethylene terephthalate (PTT), mixing the poly trimethylene terephthalate (PTT) and multiwalled carbon nanotubes using a screw speed of 60 rpm in the mixer for approximately 10 minutes in order to achieve a uniform composite mixture (PTT/MWCNT) and moulding the mixture (formulation) by a compression moulding at a temperature of approximately 250°C for 3 minute at 1 Pa pressure.

#### Complete Specification

##### Claims:We Claim:

1. A method of fabricating poly trimethylene terephthalate nanocomposite formulation for EMI Shielding, the method comprising: adding poly trimethylene terephthalate (PTT) into a mixer at a temperature of 230°C for 3 minutes; adding multiwalled carbon nanotubes in to the poly trimethyleneterephthalate (PTT); mixing the poly trimethylene terephthalate (PTT) and multiwalled carbon nanotubes using a screw speed of 60 rpm in the mixer for approximately 10 minutes in order to achieve a uniform composite mixture (PTT/MWCNT); and moulding the composite mixture (formulation) by a compression moulding at a temperature of approximately 250°C for 3 minute at 1 Pa pressure.
2. The method as claimed in claim 1, wherein the mixer is Brabender mixer (Mixer Type 50 EHT).
3. The method as claimed in claim 1, wherein after adding the poly trimethylene terephthalate (PTT) into a mixer at a temperature of 230°C, the multiwalled carbon nanotubes in the range of 0.05 to 3wt % as a filler is added i.e. melt mixing method.
4. The method as claimed in claim 1, wherein the method steps obtains the carbon nanotube reinforced poly trimethylene terephthalate (PTT) product with continuous fibers presenting better alignment and dispersion.
5. The method as claimed in claim 1, wherein the method steps obtains a homogeneous morphology of poly trimethylene terephthalate (PTT) with multiwalled carbon nanotubes (MWCNT) and also obtains better Electrical and EMI shielding properties of poly trimethylene terephthalate (PTT) with multiwalled carbon nanotubes (MWCNT).