

(54) Title of the invention : Recycling Plastics in Polymer Concrete for Construction Applications

(51) International classification :C04B0028040000, B29K0067000000, E01C0011000000, B29B0017000000, B29L0031000000

(86) International Application No Filing Date :PCT// / :01/01/1900

(87) International Publication No : NA

(61) Patent of Addition to Application Number Filing Date :NA :NA

(62) Divisional to Application Number Filing Date :NA :NA

## (71)Name of Applicant :

**1)St. Martin's Engineering College**

Address of Applicant :Sy no 98 100 dhulapally Kompally Secunderabad Secunderabad -----

**Name of Applicant : NA****Address of Applicant : NA**

## (72)Name of Inventor :

**1)V.Rajesh, Assistant Professor, CE & SMEC**

Address of Applicant :Sy no 98 100 dhulapally Kompally Secunderabad Secunderabad -----

**2)Lekha Rathod Student CE**

Address of Applicant :Sy no 98 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

**3)Thummala Sai Charan, Student CE**

Address of Applicant :Sy no 98, 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

**4)Mohammed Ateeb Adnan, Student, CE**

Address of Applicant :Sy no 98 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

**5)Akaram Arun Kumar, Student CE**

Address of Applicant :Sy no 98 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

**6)Chinthala Sai Nikhitha, Student, CE**

Address of Applicant :Sy no 98, 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

**7)Tarannum Fatima, Student CE**

Address of Applicant :Sy no 98 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

**8)Palle Sanjay, Student, CE**

Address of Applicant :Sy no 98, 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

**9)Polavarapu Saipranay Student CE**

Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----

**10)Mahender Suthar, Student, CE, SMEC**

Address of Applicant :Sy no 98 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

**11)Daka Venkata Rohith Reddy, Student CE**

Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----

**12)Molugu Gowtham Rao, Student, CE**

Address of Applicant :Sy no 98, 100 dhulapally Kompally Secunderabad SECUNDERABAD -----

## (57) Abstract :

Recycled poly(ethylene terephthalate), or PET, is mainly recovered from plastic beverage bottles and can be used to produce unsaturated polyester resins. Polymer concrete (PC) made with these resins was investigated for their properties and behaviors at the University of Texas. Thermomechanical properties investigated include strength, Young's modulus, ductility index, Poisson's ratio, coefficient of thermal expansion, shrinkage, and exotherm. Durability properties include chemical resistance, water absorption, and sandblast resistance. Structural behavior of PC reinforced with steel bars and fibers includes load deflection and moment curvature. Overlay behavior includes the effect of thermal cycles on the tensile bond strength of thin PC overlays on portland cement concrete slabs. The properties of PC-using resins based on recycled PET are comparable to those obtained from PC using virgin resins. Potential applications of such PC materials include precast components; repair of portland-cement concrete; and bridge, wall, and floor overlays. Resins using recycled PET offer the possibility of a lower source cost of materials for making useful PC-based products. Also, the recycling of PET in PC would help alleviate an environmental problem and save energy.

No. of Pages : 10 No. of Claims : 5