

(54) Title of the invention : A SMART RECYCLING BIN WITH INTEGRATED SORTING AND REWARD SYSTEM

(51) International classification :G06Q0030020000, B65F0001140000, B65F0001000000, G06N0020000000, B03B0009060000

(86) International Application No :NA  
 Filing Date :NA

(87) International Publication No : NA

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

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

(71)Name of Applicant :  
**1)Brainware University, Kolkata**  
 Address of Applicant :398, Ramkrishnapur Rd, Near Jagadighata Market, Barasat, Kolkata, West Bengal 700125 -----

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

(72)Name of Inventor :  
**1)Dr.Sudipta Adhikary**  
 Address of Applicant :Assistant Professor, Department of Law, Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal 700125 -----

**2)Dr.Kaushik Chanda**  
 Address of Applicant :Assistant Professor, Department of Computational Sciences, Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal 700125 -----

**3)Dr. Kaushik Banerjee**  
 Address of Applicant :Professor, Department of Law, Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal 700125 -----

**4)Ms. Purbita Das**  
 Address of Applicant :Assistant Professor, Department of Law, Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal 700125 -----

**5)Mr. Aryabhata Ganguly**  
 Address of Applicant :Assistant Professor, Department of Computational Sciences, Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal 700125 -----

**6)Mr. Somnath Dey**  
 Address of Applicant :Assistant Professor, Department of Computational Sciences, Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal 700125 -----

**7)Mr. Subhadip Nandi**  
 Address of Applicant :Assistant Professor, Department of Computational Sciences, Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal 700125 -----

(57) Abstract :  
 The present invention pertains to a smart recycling bin with integrated sorting and reward system. The present invention introduces a Smart Recycling Bin featuring advanced sensors, machine learning capabilities, and an integrated reward system. This bin autonomously sorts recyclables—like plastics, glass, metal, and paper—upon disposal. With its cutting-edge sensors, the bin detects and classifies items, and through its machine learning algorithms, it optimizes its sorting precision over time. A distinctive aspect of this bin is its reward system, which allocates points or incentives to users based on their recycling contributions. These incentives can be exchanged for various rewards, including discounts, vouchers, or contributions to eco-friendly causes. This inventive approach not only streamlines waste management but also invigorates recycling habits, diminishes recyclable contamination, and bolsters a circular economy. In essence, this patent proposal encapsulates a pioneering and effectual solution to global waste management challenges by merging technology, gamification, and ecological responsibility.

No. of Pages : 16 No. of Claims : 10