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| **Title:** | Advanced Color Sorting Conveyor System Using Arduino and TCS3200 Color Sensor for Precise Color Classification | | |
| **Author(s) Name:** | Mushfiqur Rahman; Habib A Hasan; Yeasin Arafat Emon; Arafat Hossain; Abu Rubayat Rokon; Muhibul Haque Bhuyan | | |
| **Contact Email(s):** | muhibulhb@aiub.edu | | |
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| **Abstract:** |  |
| Abstract— This paper introduces an Arduino-based color-sorting conveyor belt system that automates object sorting by color. Employing a TCS3200 color sensor, an Arduino microcontroller detects red, green, and blue objects. Servo motors and IR sensors are utilized to sort objects accurately based on their color, while an LCD screen provides real-time feedback. The conveyor belt's motor controller regulates speed and direction, pausing during color detection for precise sorting. Experimental results demonstrate 100% efficiency in color detection and sorting, highlighting the system's potential for industrial automation applications. | |