

「创新灵感 - 创意之问」

# 快递包装处理难题：如何高效利用空间、便利回收？

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## The Challenge of Express Packaging Disposal: How to Improve Space Efficiency and Facilitate Recycling?

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### 1 现象 Phenomenon

日常网购成为普遍消费方式，大量快递包装盒随商品送达居民手中。这些包装盒多为瓦楞纸材质，带有固定折叠造型，使用后常被直接丢弃至小区垃圾桶或垃圾站；部分小区、快递驿站虽设置了快递包装回收箱，但回收箱多为固定尺寸的箱体结构，处理麻烦。

Online shopping has become a widespread consumption method, with a large number of express packaging boxes delivered to households alongside purchased goods. These packaging boxes are mostly made of corrugated cardboard and feature fixed folded structures. After use, they are often directly discarded into community trash bins or waste stations. Although some residential areas and express delivery stations have set up dedicated recycling bins for

express packaging, these bins are typically fixed-size containers, making the recycling process cumbersome and inefficient.

### 2 问题描述 Problem Description

直接丢弃的快递包装盒因保留原有立体造型，内部存在大量空隙，堆放时会占据垃圾站极大空间，导致垃圾堆放密度低，增加垃圾运输频次和成本；一些企业设置的回收箱容量有限，尤其在网购高峰期，一个小时就会被堆满，后续产生的快递包装无法及时回收，只能混入生活垃圾，造成资源浪费；同时，未折叠的包装盒体积大，居民携带至回收箱时也存在不便，降低了主动回收的意愿。

Directly discarded express packaging boxes retain their three-dimensional structure, containing significant empty space. When stacked, they occupy

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excessive volume in waste stations, leading to low waste density and increasing the frequency and cost of waste transportation. Recycling bins provided by some enterprises have restricted capacity, especially during peak online shopping periods. They can become full within an hour, leaving subsequently generated packaging unrecycled and forcing it to be mixed with household waste, resulting in resource wastage. Additionally, non-folded packaging boxes are bulky and inconvenient for residents to carry to recycling bins, reducing their motivation to participate actively in recycling efforts.

### 3 初步思考 Preliminary Considerations

寻求一种便捷、高效的快递包装处理方案，既能减少包装盒占用的空间，无论是垃圾堆放还是回

收存储，又能提高回收利用率，降低资源浪费。不限制方向。可从包装盒的便捷折叠设计（新设计，包含数学体积计算）、现场简易加工方式、包装材料的简易粉碎再生等方向。

The goal is to develop a convenient and efficient solution for express packaging disposal that minimizes the space occupied by packaging boxes—whether during waste storage or recycling—while enhancing recycling rates and reducing resource waste. Research directions are not limited and may include: designing easily foldable packaging (incorporating mathematical volume optimization principles), exploring on-site simple processing methods, or investigating straightforward techniques for crushing and regenerating packaging materials.

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