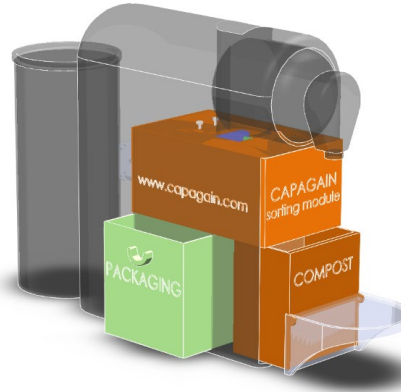


Capsule recycling system for coffee machines



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Keywords

Coffee Packaging Recycle

Intellectual Property

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Publications

<https://capagain.com/>

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Description

Single-use beverage capsules are hard to recycle. They are a combination of organic material and aluminum or plastic packaging. Unfortunately, there is no easy way to separate the components for recycling, and people who pay for the convenience of capsules do not care enough to painstakingly disassemble the capsules after use.

Tens of billions of capsules are consumed each year, with a massive environmental burden. Resultingly, Nespresso spent ~CHF60M (until 2016) to collect and recycle only the 24% of its original capsules ("The Positive Cup" published by Nespresso). Nespresso is only one out of over 300 capsule brands on the global market. Over the last few years, the media have brought enormous visibility to the problem and consumers are increasingly aware. In addition, EU regulations on recycling rates are becoming more and more strict. Some cities like Hamburg have already banned the use of capsules.

Our solution is an electromechanical module which sorts the materials of coffee capsules. Instead of disposing the used capsule after the brew, our module automatically separates the coffee ground from the packaging. Finally, the machine stores distinct wastes into separate boxes. Our solution is a compact device which can be realized in two versions: a standalone accessory (Smart Bin) or an add-in for beverage capsule machines (Smart Drawer).

Advantages

Our solution enables the compaction of the waste materials inside the coffee machine, thus potentially increasing the storage capacity of the machine.

In addition, machines equipped with our solution are more environmentally friendly because they allow to recycle the aluminum or plastic in the respective bins and use the coffee grounds as compost or fertilizer for growing plants. For example, coffee grounds are widely used for growing mushrooms.

In addition, our solution avoids the need to store used capsules in the kitchen or in the office, thus eliminating bad smell and improving hygiene.

Applications

- Domestic coffee-capsule machines
- Office coffee-capsule machines
- Recycling bins
- Compost bins
- Agricultural fertilization (e.g. fungiculture)