

Mechanical and electronic disassembly of solar container device

Is teleoperation a viable solution for EV battery disassembly?

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<div class="df_qntext">What is the application of robotics in EV battery disassembly?

It includes the use of flexible disassembly tools and robotic manipulations tailored to the disassembly process. Techniques specific to the disassembly of EV battery, such as grasping, separating, and removing components, are detailed in this section. This theme underscores the application of robotics in EV battery disassembly. 3.1.

<div class="df_qntext">Can robots disassemble EV batteries?

As demonstrated in Fig. 1, robots can significantly contribute to almost all disassembly functions and processes (e.g. target detection, task planning, and manipulation). The aim of this paper is to review research on the robotic disassembly (RD) of EV batteries. Section 2 outlines the current challenges faced in the area.

<div class="df_qntext">Is teleoperation a viable solution for EV battery disassembly?

Teleoperation studies of disassembly have already been published (Schmidt, Kron, & Hoogen, 2003). Teleoperation is seen as an important solution due to the serious safety risks associated with EV batteries (Hathaway et al., 2023).

<div class="df_qntext">How to design an active disassembly device?

During products design phase, a suitable active disassembly device must be selected carefully based on the requirements of the products. To design a product based upon AD concept, the traditional design method must be applied at first to the initial device.

<div class="df_qntext">What is DSP in EV battery disassembly?

DSP focuses on determining the order in which components are removed from an EV battery during the disassembly process. It involves decision-making and planning amidst significant complexity and uncertainty and aims to achieve a variety of goals such as costs reduction, increased speed, and enhanced efficiency (Z. Zhou et al., 2019).

<div class="df_qntext">Is non-destructive disassembly a viable alternative?

Implementing non-destructive disassembly can be costly, unreliable and slow due to the complexity of sensor and actuator systems involved. As a result, opting for destructive disassembly or semi-destructive disassembly might present a more viable alternative (Herrmann et al., 2012). However, these methods tend to increase safety risks.

A solar panel disassembly device for disassembling a solar panel is provided. In the solar panel, a glass plate, an encapsulant, and a solar cell are stacked in sequence.

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The present paper proposes the application of a structured method for the analysis and reconfiguration of the disassembly depth distribution of components making up an electronic device, ...

The demand for electric vehicle (EV) battery services, such as repair, remanufacturing, and recycling, is rising as more EVs enter the market. Disassembly is an essential step in these ...

In the field of solar panel disassembly, several key machines play crucial roles. Here, we will introduce three kind: Solar Panel Deframing Machine, Photovoltaic Panel Glass Removal Machine and Dust ...

Notably, the separation of PCB components plays a pivotal role in streamlining the recycling procedure. Furthermore, as PCBs serve as the foundation of electric and electronic devices, ...

Specific methods and technical skills are being developed in the iDEAR research project to enable the disassembly of end-of-life electronics by robots. The biggest challenge is the wide ...

Electrical and Mechanical Assembly/Disassembly Procedures Category includes scenarios that guide users through the detailed steps of assembling and disassembling key components in electric ...

By carefully monitoring issues during the process and conducting thorough maintenance post-disassembly, one can ensure that their solar light strip continues to perform optimally. Although ...

container, disperse and fill it up. Since gases are compress-ible, they can be pumped into high pressure containers to compres their volume for storage purposes. In any case, the gas molecules will always ...

Currently, the disassembly of EoL EV batteries relies heavily on manual labour. However, demonstrations of robot-based automated disassembly lines are being explored for broader ...

On the basis of these premises, this study aimed to design an environment-friendly automatic system for disassembling ECs from WPCBs using heated air and electric heating pipes ...

For environmental and economical reasons it is requested today to turn away from deposition and incineration of end-of-life products. This paper gives an overview of more than 10 ...

Regardless the absence of a standardized design, some similarities can be identified and considered for the implementation of disassembly procedures. From the comparison of the ...

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Some processes for the recycling of electronic consumer products are already known, but have to be developed further in order to hasten the design of a disassembly system which is ...

Abstract The increasing volume of electronic Waste from Electrical and Electronic Equipment (WEEE) presents significant environmental and economic challenges. Efficient recycling ...

Disassembly automation is an approach to aiding with such treatment of e-waste products. The primary challenges in disassembly automation concern uncertainties, originating from: ...

Taking the intelligent disassembly of retired power battery pack as the research object, a virtual robotic disassembly system is constructed. The system consists of a multi-robot collaborative ...

The paper "Screw detection for disassembly of electronic waste using reasoning and re-training of a deep learning model" is contained in Section 3.3. All works are acknowledged in the List of ...

Subsequently, the investigated cells are manually dismantled for post-mortem analyses. A disassembly flow is developed and evaluated through morphological analysis to ...

Fully or semi-automatized disassembly will gain importance in the nearest future especially for electr (on)ic waste. Concerning the recycling logistic - a new concept for this purpose ...

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