Lithium battery pack disassembly production line

What is a planning approach for battery pack disassembly?
For example,Wegener et al. mainly discussed a planning approach for battery pack disassembly using a priority matrix and disassembly graph. They featured the disassembly of the Audi Q5 Hybrid pack to develop the sequence and strategy while proposing a basic workstation layout for the disassembly process.

What is a Li-ion battery pack?
Li-ion battery packs are typically composed of abattery module and a battery management system(Yun et al.,2018),with the modules being assembled from battery cells. In order to achieve the energy demands,cells are connected in series and parallel,depending on the required capacity and application.

How much does it cost to disassemble a battery pack?
The total cost per pack disassembly into modules ranges from EUR 80 to 110,depending on the size of the disassembly plants,in Germany. Rallo et al. considered the laboratory scale and determined a total cost of EUR 1325 to disassemble the Smart ForFour battery pack into cells.

What is the disassembly process of the EVB pack?
Disassembly process of the EVB pack Disassembly is an unavoidable step in the recovery process of EoL products. In the case of EVBs,the main goal of disassembly is theextraction of the modulesas they are the most valuable components in the EVB and,potentially,could be reused.

Is semi-automated battery disassembly possible?
Disassembly tests were executed with the demonstrator. Findings proved that semi-automated disassembly of battery systems is feasible. They have developed a concept,i.e.,a workstation for more flexibility,productivity,and safety in the disassembly of LIBs,at the module level.

How a battery design is developed?
The design solutions are assessed from an assembly,disassembly and modularity point of view to establish what solutions are of interest. Based on the evaluation,an "ideal" battery is developed with focus on the hardware,hence the housing,attachment of modules and wires,thermal system and battery management box.

Based on the disassembly sequence planning (DSP), the model provides the optimal disassembly level and the most suitable decision for the use of the disassembled ...

In order to achieve rapid, efficient and safe disassembly of battery packs, and improve resource utilization efficiency, reduce environmental pollution, it is necessary to set battery...

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Disassembling and remanufacturing the lithium-ion power packs can highly promote electric vehicle market penetration by procuring and regrouping reusable modules as ...

Disassembling and remanufacturing the lithium-ion power packs can highly promote electric vehicle market penetration by procuring and regrouping reusable modules as stationary energy storage devices and cut life-cycle cost and environmental impact. Disassembly efficiency is crucial for battery remanufacturing companies in reverse supply chains ...

In order to realize an automated disassembly, a computer vision pipeline is proposed. The approach of instance segmentation and point cloud registration is applied and validated within a demonstrator grasping busbars from the battery pack.

Based on the disassembly sequence planning (DSP), the model provides the optimal disassembly level and the most suitable decision for the use of the disassembled components: reuse, remanufacturing, recycling or disposal. The lithium-ion (Li-ion) battery from the Audi A3 Sportback e-tron Hybrid is selected as the case study.

Our product portfolio starts after cell production and covers module and pack assembly for lithium-ion or sodium-ion batteries. We are developing, constructing and building customized manufacturing solutions for transportation battery and energy storage systems.

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