



agriculture



Special Issue Reprint

'Eyes', 'Brain', 'Feet' and 'Hands' of Efficient Harvesting Machinery

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Harvesting machinery has the main function of cutting, picking, or digging mature crop seeds, fruits, stalks, leaves, root parts, or the whole plant and are also necessary to complete collection, threshing, cleaning, transfer, and other operations. The characteristics of harvesting machinery are as follows: first, the operating object is biological; second, the working process refers to the separation between plant tissues or the separation of a plant from soil; and third, the working environment is unstructured. Therefore, efficient harvesting machinery is an area of comprehensive research that integrates the fields of mechanical and biological material, information, and computers. This Special Issue focused on precise identification and positioning systems (“eyes”), sensitive decision-making and control systems (“brain”), highly adaptable chassis and mobile platforms (“feet”), efficient end-effectors and harvesting components (“hands”), etc., related to efficient harvesting machinery. The topics of the publications include: Crop–soil–machine systems; Mechanics and dynamics of harvesting machinery; Chassis of harvesting machinery; Efficient harvesting components; Field environment sensing and recognition; Navigation and positioning systems of harvesting machinery; Multi-source information fusion, analysis, and decision making in harvesting operations; Cooperative harvesting operations of multiple machines in the field; Unmanned harvesters.



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