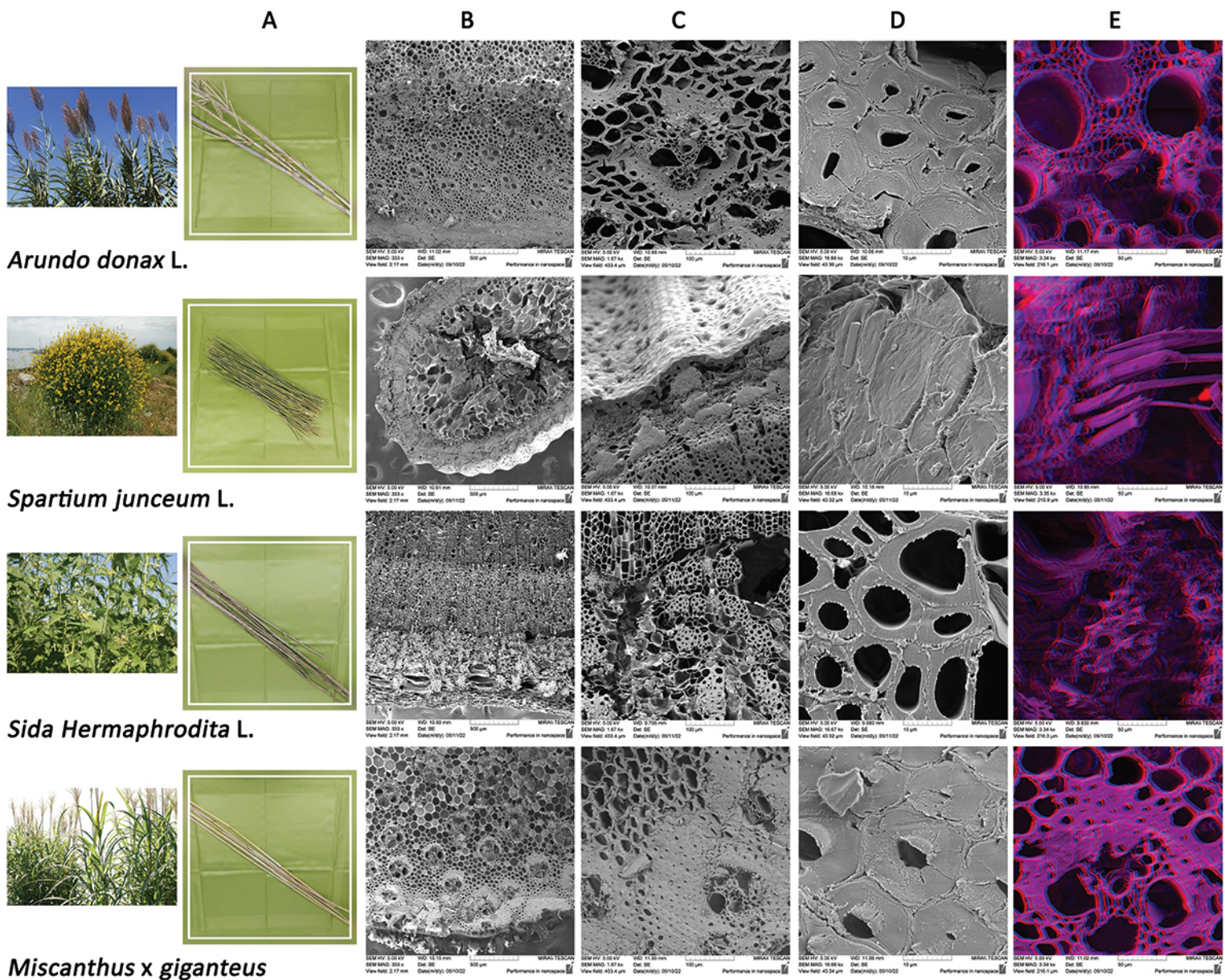


MORPHOLOGICAL ANALYSIS OF FIBRES EXTRACTED FROM LIGNOCELLULOSIC BIOMASS - RESOURCES OF RENEWABLE ENERGY

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Lignocellulosic biomass is one of the most known raw materials for obtaining sustainable and environmentally friendly energy. The morphological characteristics of the cross sections of two self-seeding crops: giant reed (*Arundo donax* L.) and Spanish broom (*Spartium junceum* L.) and two energy crops: miscanthus (*Miscanthus x giganteus*) and Virginia mallow (*Sida Hermaphrodita* L.) were examined.



Legend: (A) dry plant stem; (B) stem cross section; (C) magnified details of fibres cross sections; (D) fibres cross sections with noticeable lumen and secondary cell wall and (E) SEM micrographs of cellulose fibres in 3-D projection.

CONCLUSION:

The establishment of such a production process where the waste of one industry becomes the input raw material of another, respects the main task of the circular economy with the aim of reducing waste. SEM proved to be an efficient tool for determination of structural features of lignocellulosic biomass and its degradation after performed pretreatments.

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