

Article

# Characterization of Mixtures Based on High Density Polyethylene and Plasticized Starch

Maria Daniela Stelescu <sup>1</sup>, Ovidiu-Cristian Oprea <sup>2,3\*</sup>, Doina Constantinescu <sup>4</sup>, Ludmila Motelica <sup>3,5</sup>, Anton Fikai <sup>2,3</sup>, Roxana-Doina Trusca <sup>2</sup>, Maria Sonmez <sup>1</sup>, Dana Gurau <sup>1</sup>, Mihai Georgescu <sup>1</sup>, Rodica Roxana Constantinescu <sup>1</sup>, Bogdan-Stefan Vasile <sup>3,5</sup>, Denisa Fikai <sup>2,3</sup>

<sup>1</sup> Division Leather and Footwear Research Institute, National Research & Development Institute for Textiles and Leather, 93 Ion Minulescu St., 031215 Bucharest, Romania; dmstelescu@yahoo.com (M.D.S.); maria.sonmez@icpi.ro (M.S.); rodica.roxana@yahoo.com (R.R.C.); mihai.georgescu@icpi.ro (M.G.)

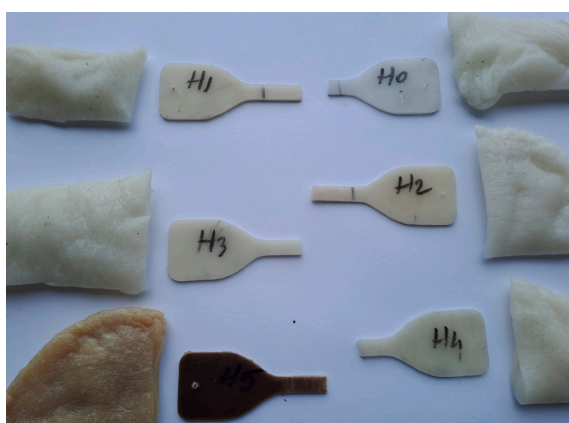
<sup>2</sup> Faculty of Chemical Engineering and Biotechnologies, National University of Science and Technology POLITEHNICA Bucharest, 1-7 Polizu St., 011061 Bucharest, Romania; ludmila.motelica@upb.ro (L.M.); anton.fikai@upb.ro (A.F.); denisa.fikai@upb.ro (D.F.)

<sup>3</sup> Academy of Romanian Scientists, 3 Ilfov St., 050044 Bucharest, Romania; vasile\_bogdan\_stefan@yahoo.com (B.S.V.)

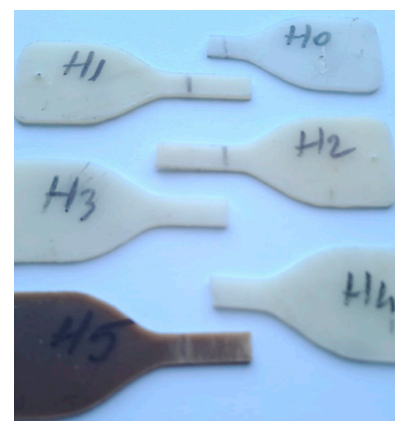
<sup>4</sup> S.C. Monofil S.A, Uzinei, 1, Savinesti, Piatra Neamt, Romania, monofil.srl@gmail.com (D.C.)

<sup>5</sup> Research Center for Advanced Materials, Products and Processes, National University of Science and Technology POLITEHNICA Bucharest, 060042 Bucharest, Romania

\* Correspondence: ovidiu.oprea@upb.ro

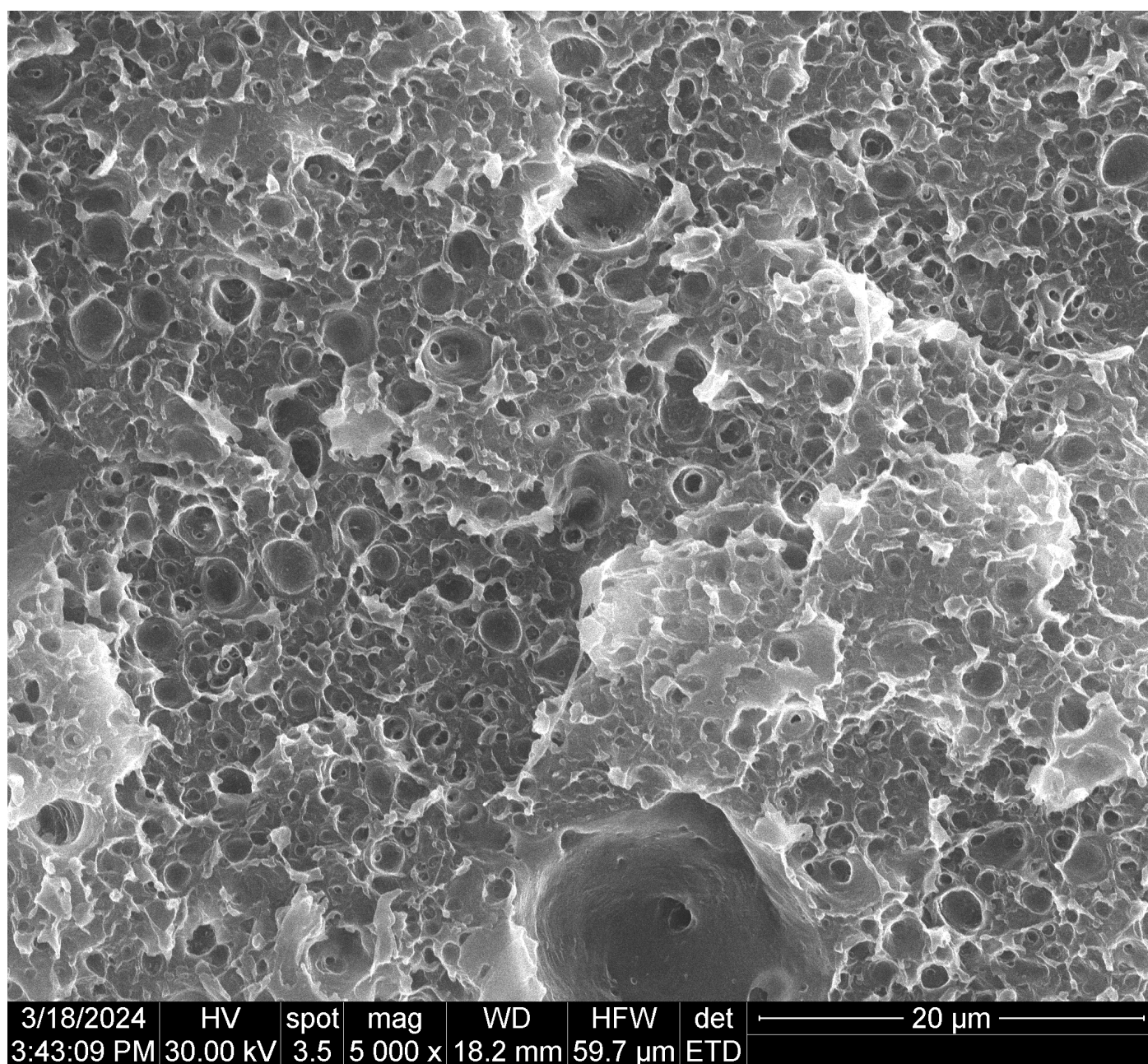


a.

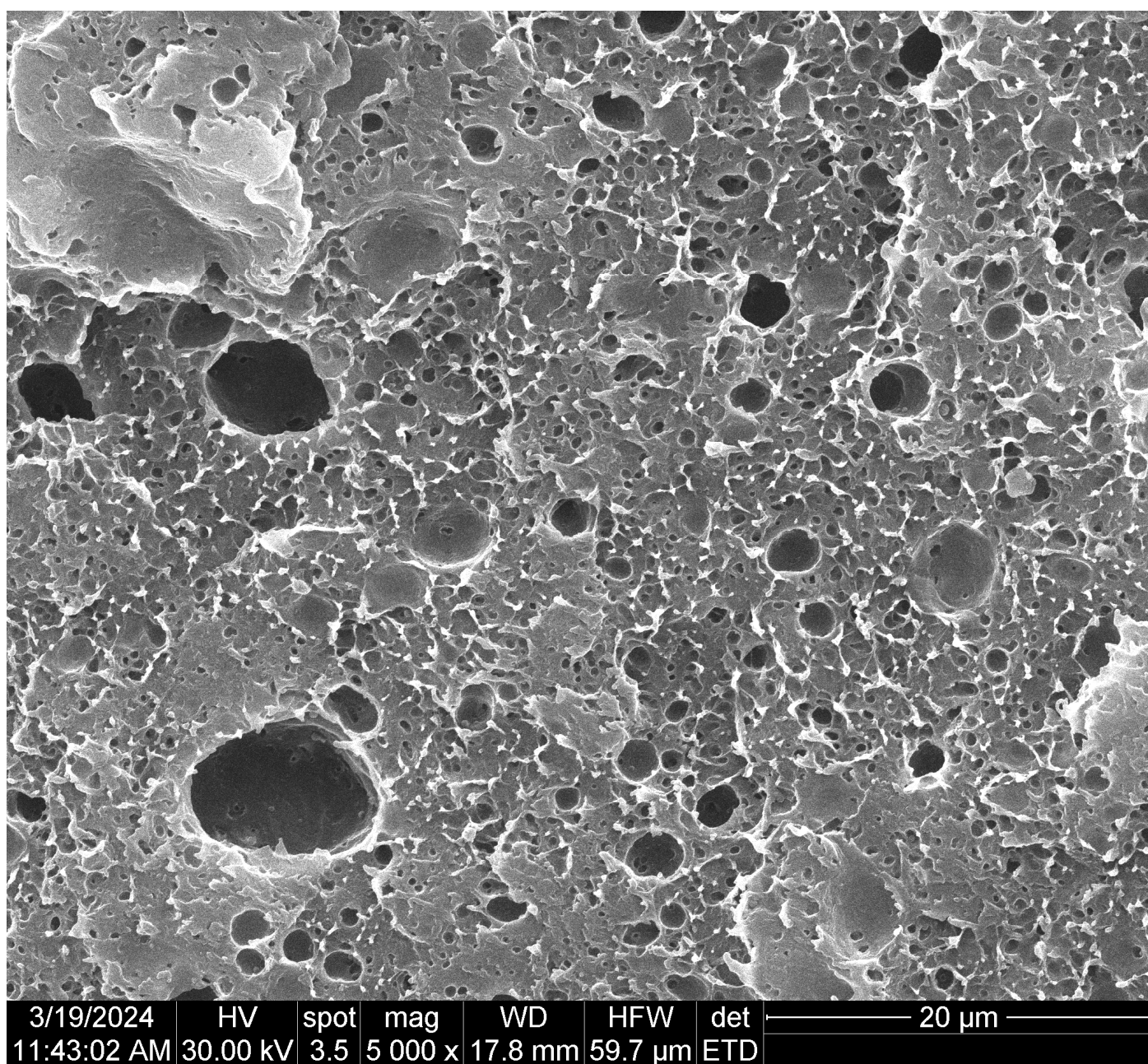


b.

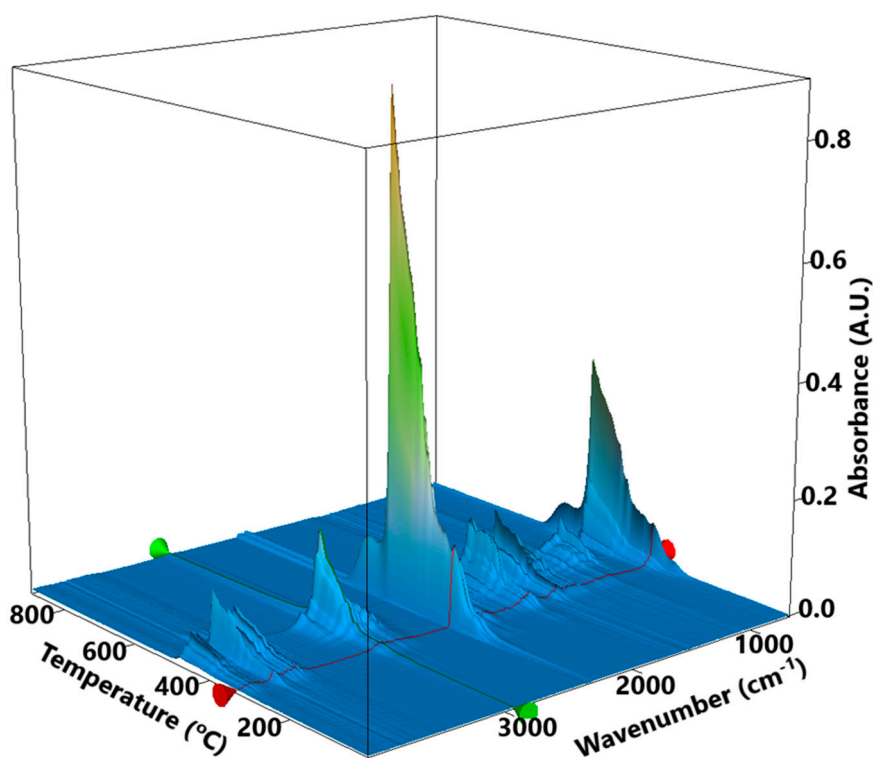
**Figure S1.** Picture of the H0-H5 samples (a) and close-up view (b).



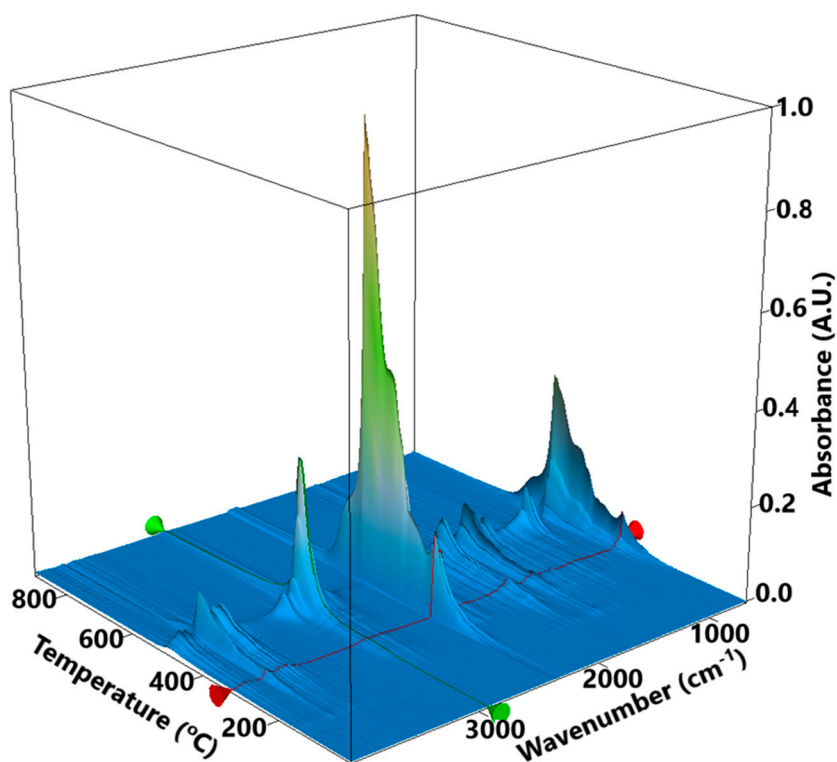
**Figure S2.** The SEM micrograph for H1 sample at 5000x magnification.



**Figure S3.** The SEM micrograph for H3 sample at 5000x magnification.

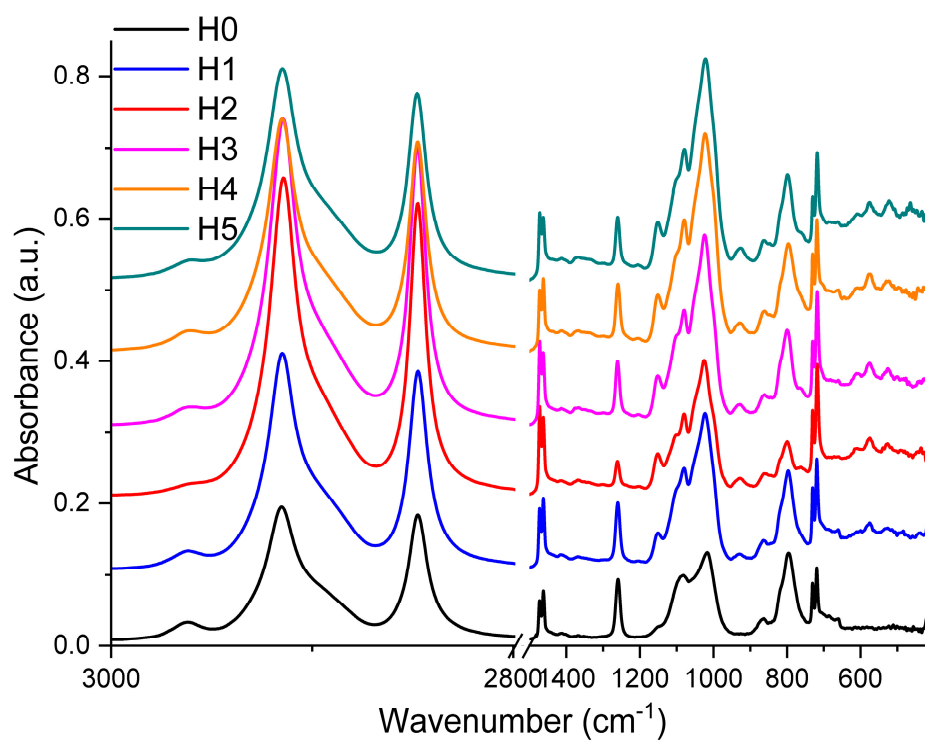


**Figure S4.** The FTIR 3D diagram for the H0 sample. The red line represents the FTIR spectrum at 330°C and the green line is the evolving trace for the wavenumber 2933 cm<sup>-1</sup> assigned to the C-H asymmetric vibration from –CH<sub>2</sub> moieties.



**Figure S5.** The FTIR 3D diagram for the H5 sample. The red line represents the FTIR spectrum at 320°C and the green line is the evolving trace for the wavenumber 2933 cm<sup>-1</sup> assigned to the C-H asymmetric vibration from –CH<sub>2</sub> moieties.





**Figure S6.** Detail of the FTIR spectra for H0-H5 samples.