Supplementary data for Polymers

# OH End-Capped Silicone as an Effective Nucleating Agent for Polylactide—A Robotizing Method for Evaluating the Mechanical Characteristics of PLA/Silicone Blends

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# 1. Figures

## 1.1. Figure S1

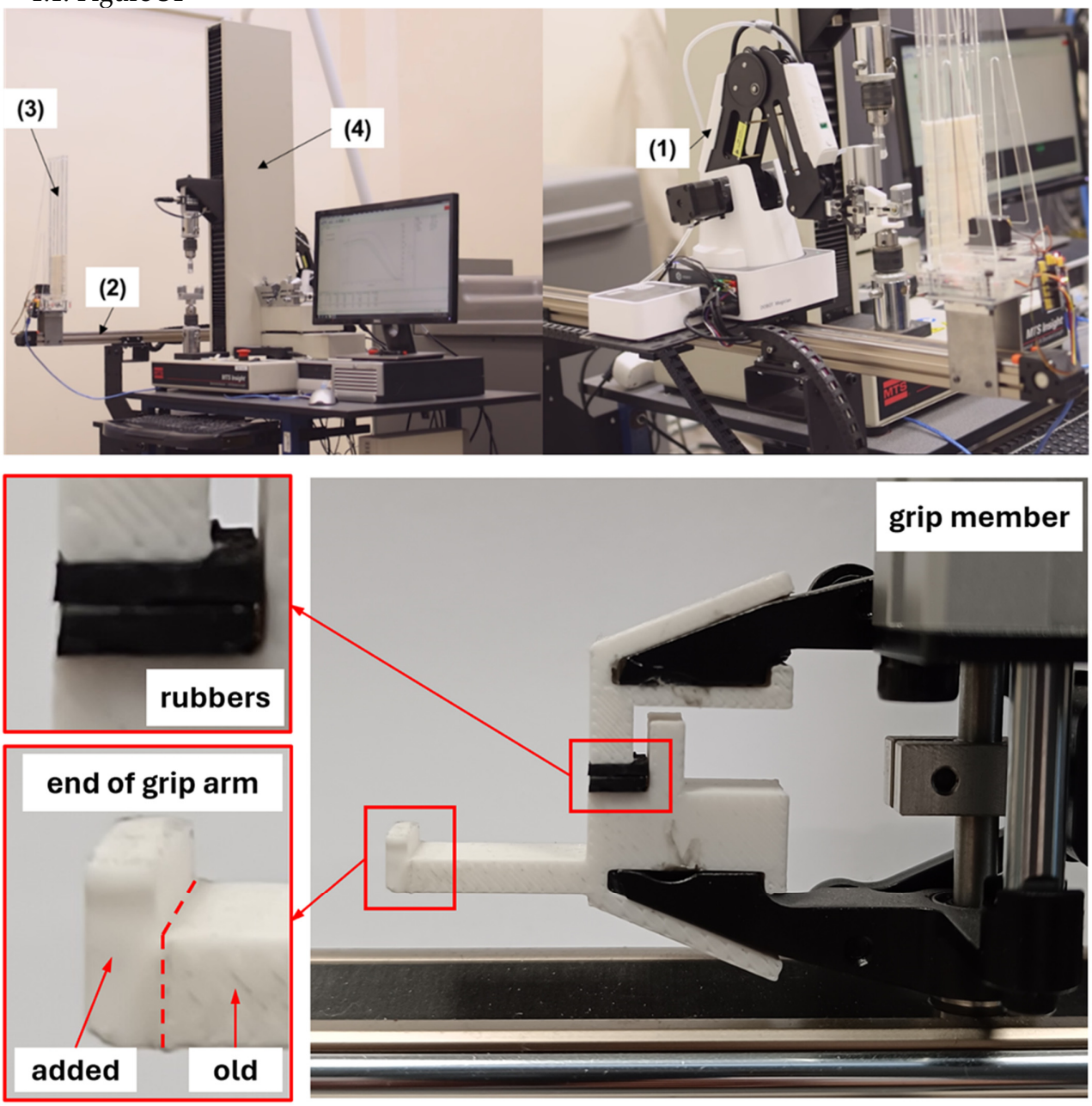
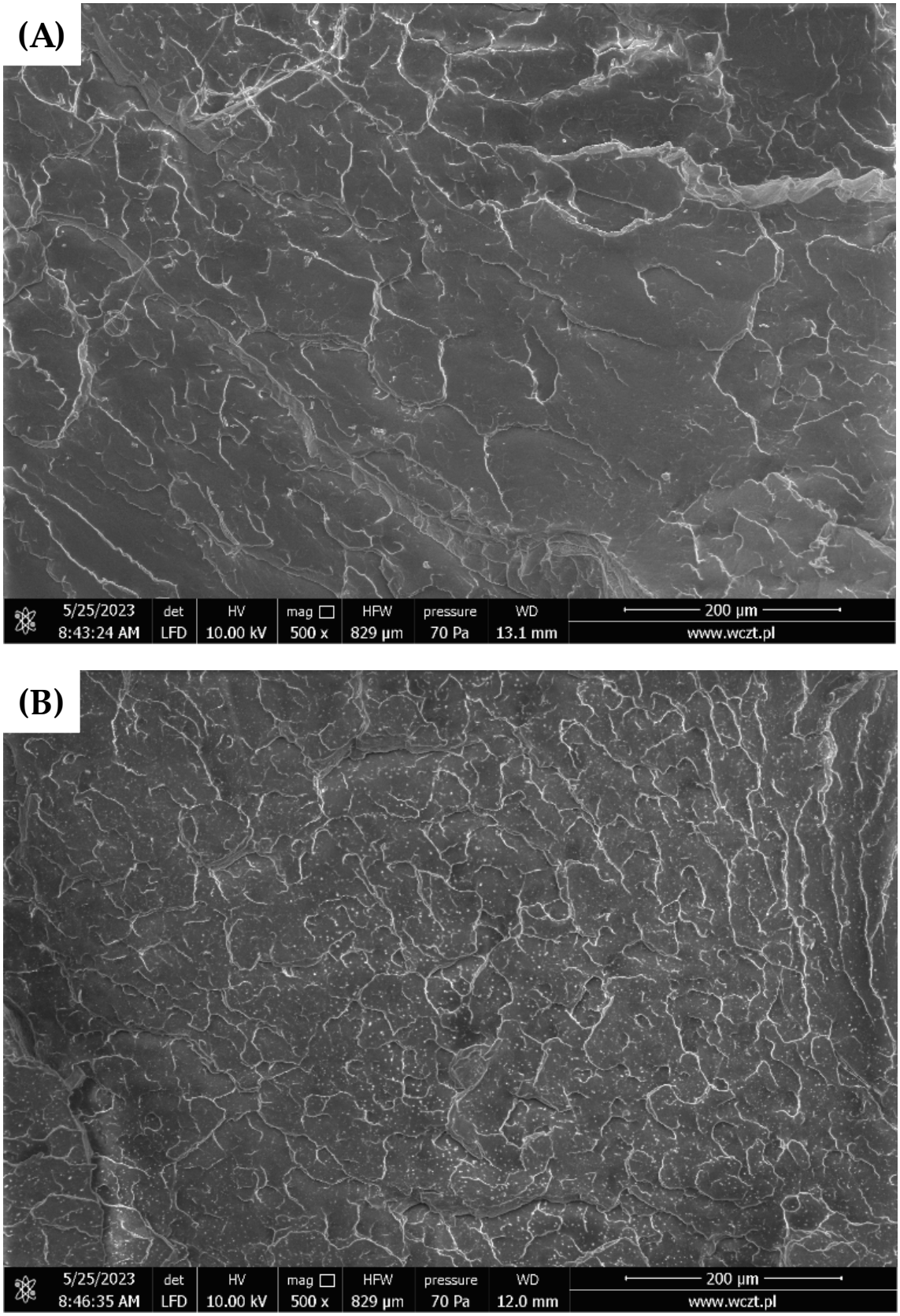



**Figure S1.** High-throughput experimentation station: Dobot Magician manipulator (1), linear slide (2), sample magazine (3), and MTS Insight testing machine (4).

1.2. Figure S2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13.1 mm
200 µm
www.wczt.pl
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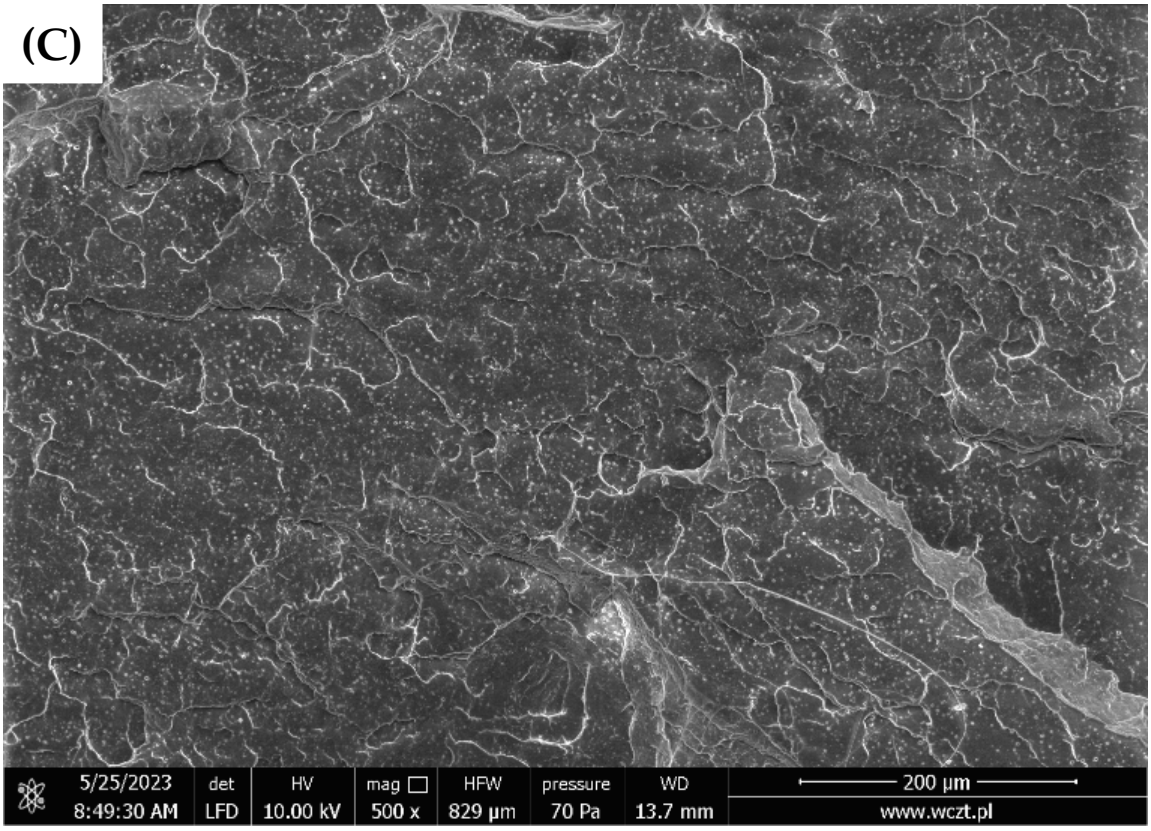
www.wczt.pl

**(C)**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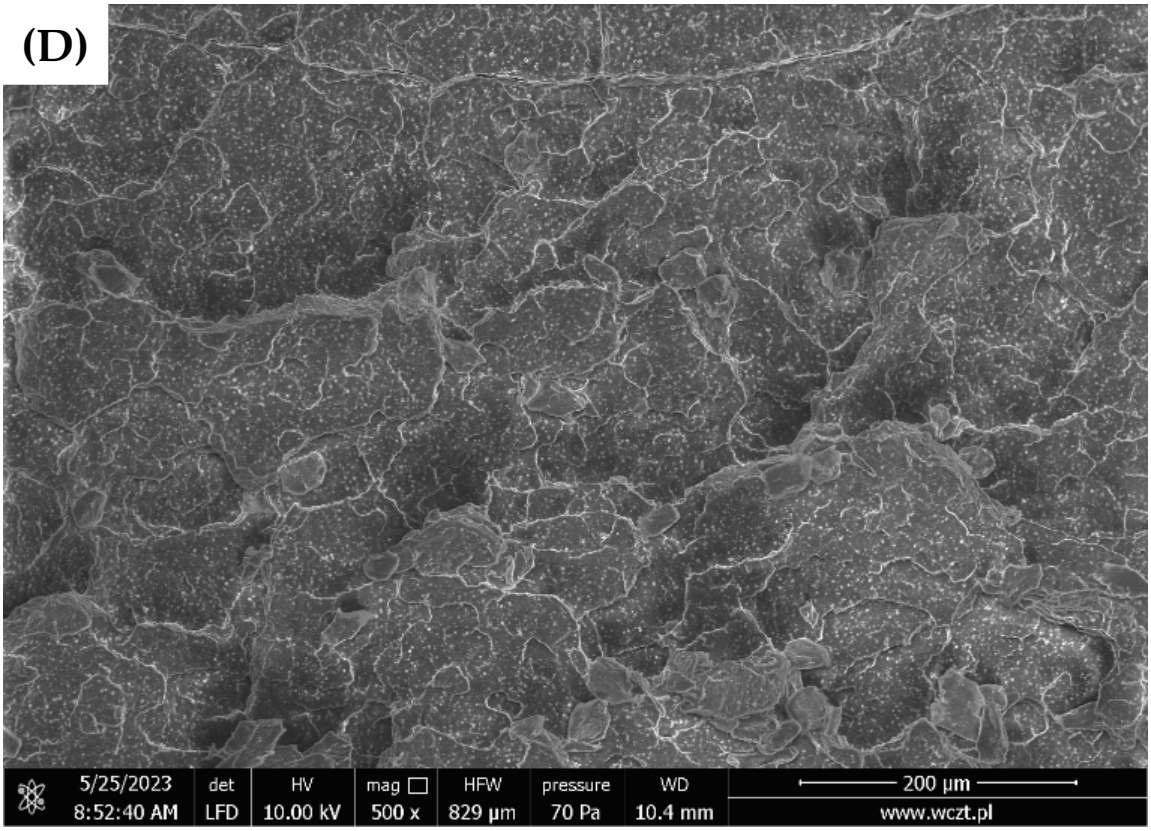
www.wczt.pl

**(D)**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www.wczt.pl

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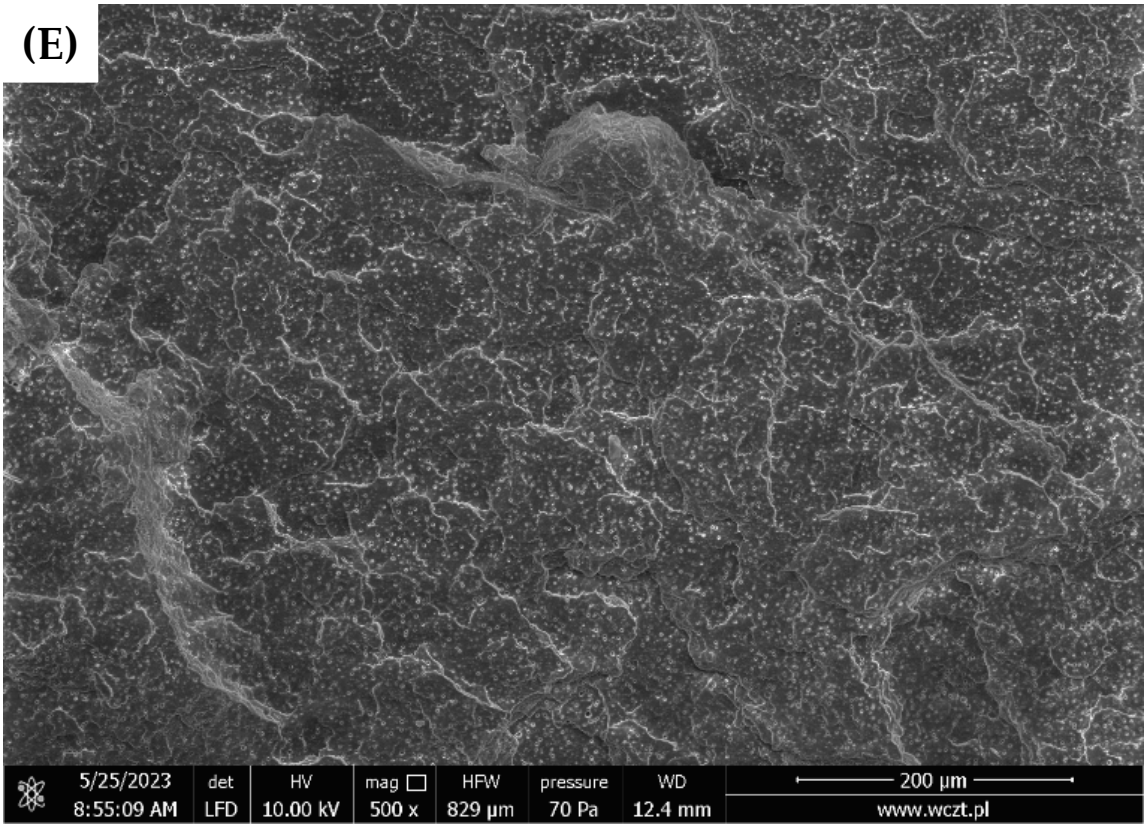
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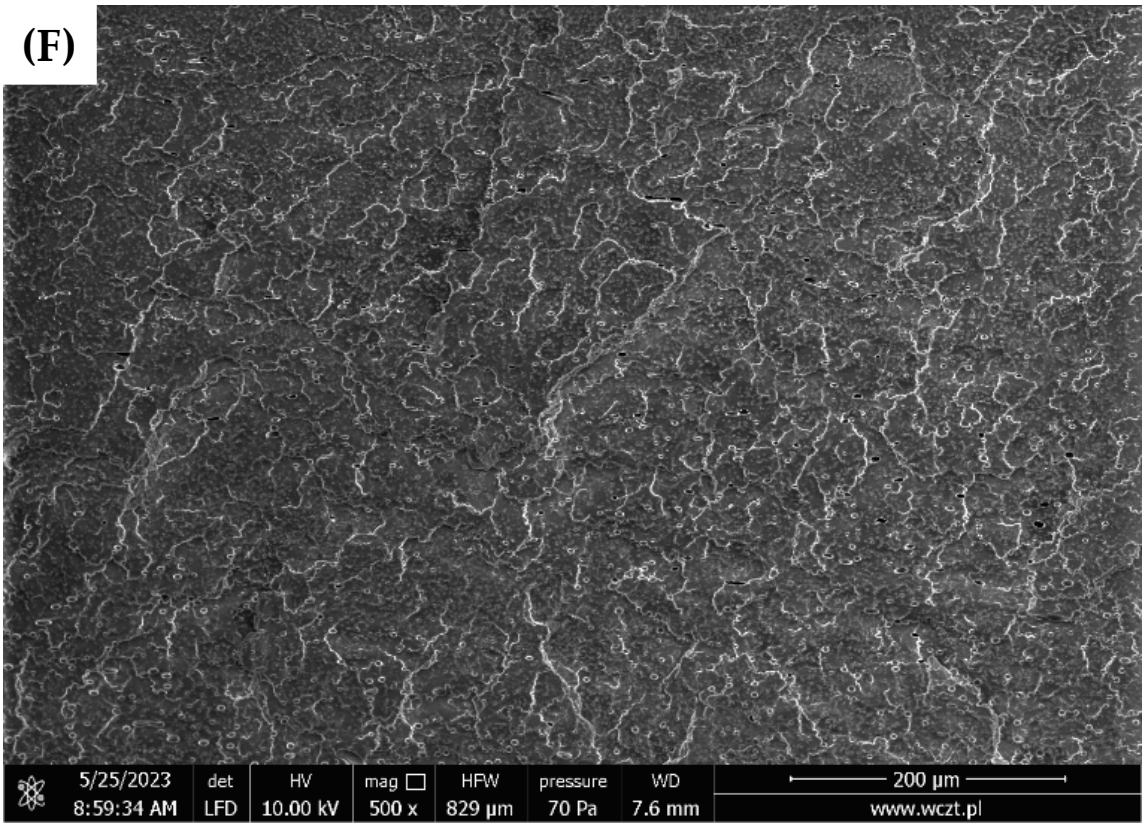
www.wczt.pl

**(F)**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www.wczt.pl

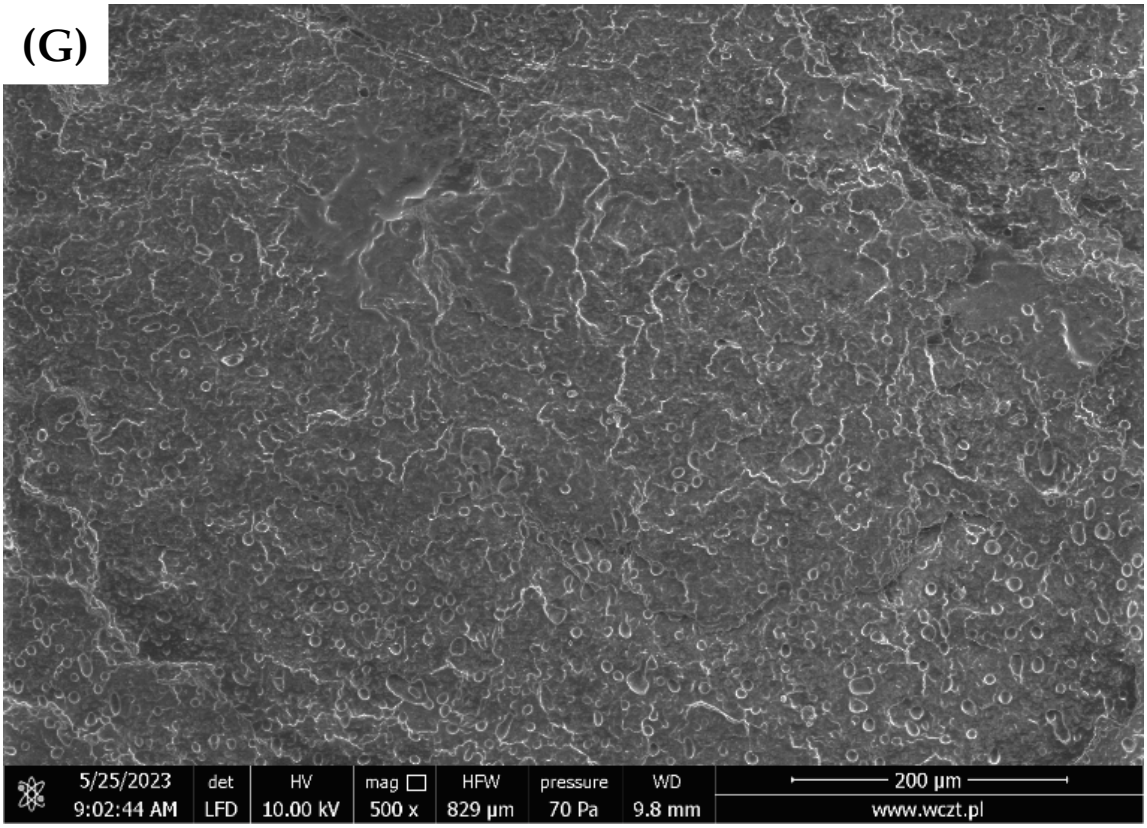


**Figure S2.** SEM images PLA (A), 0.5%OH20k (B), 1.0%OH20k (C), 2.5%OH20k (D), 5%OH20k (E), 10%OH20k (F), 15%OH20k (G).

1.3. Figure S3

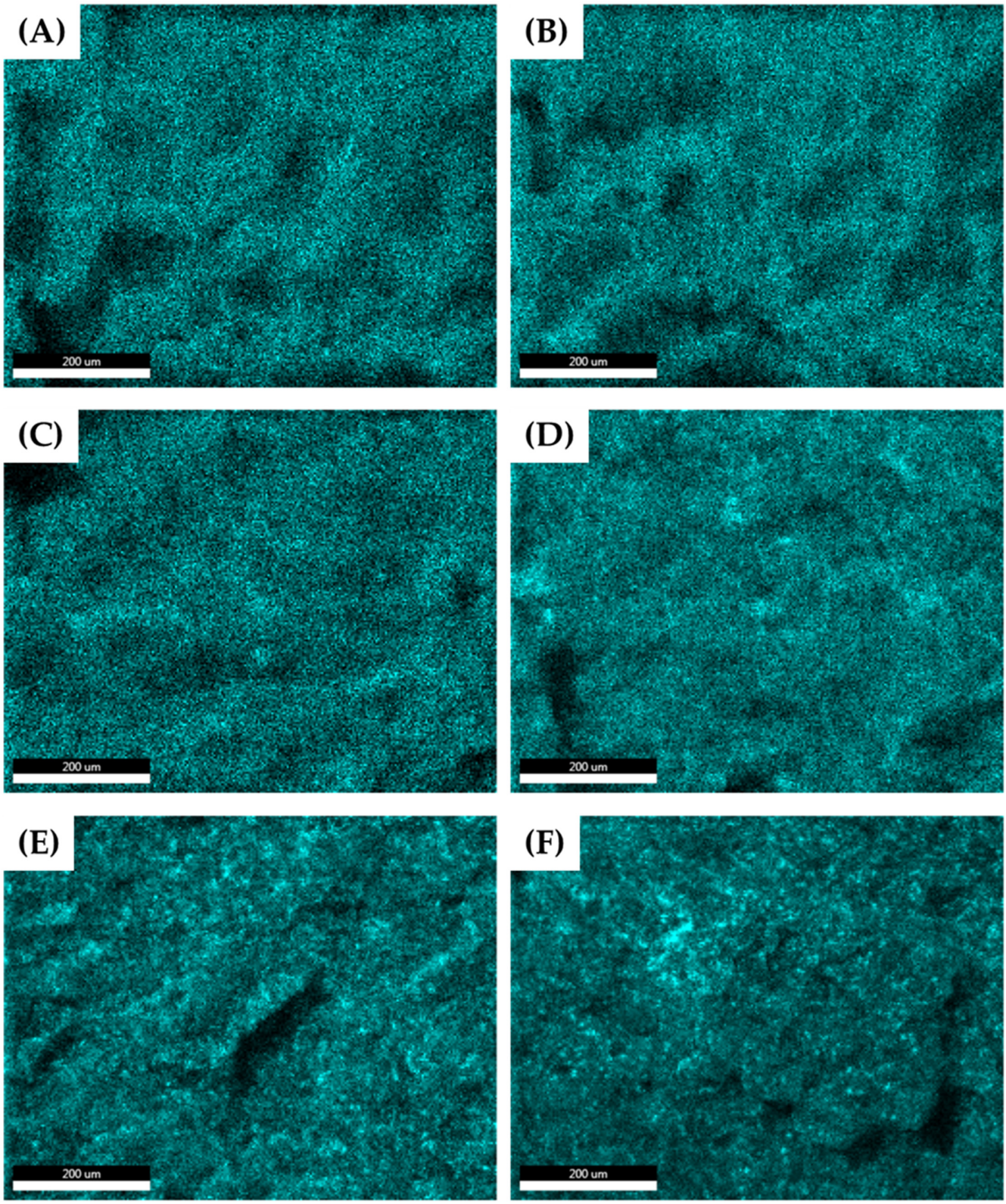


**Figure S3.** Si (silicon) distribution on the surface of PLA/OH20k blends breakthroughs made in liquid nitrogen. 0.5%OH20k (A), 1.0%OH20k (B), 2.5%OH20k (C), 5%OH20k (D), 10%OH20k (E), 15%OH20k (F).

1.4. Figure S4

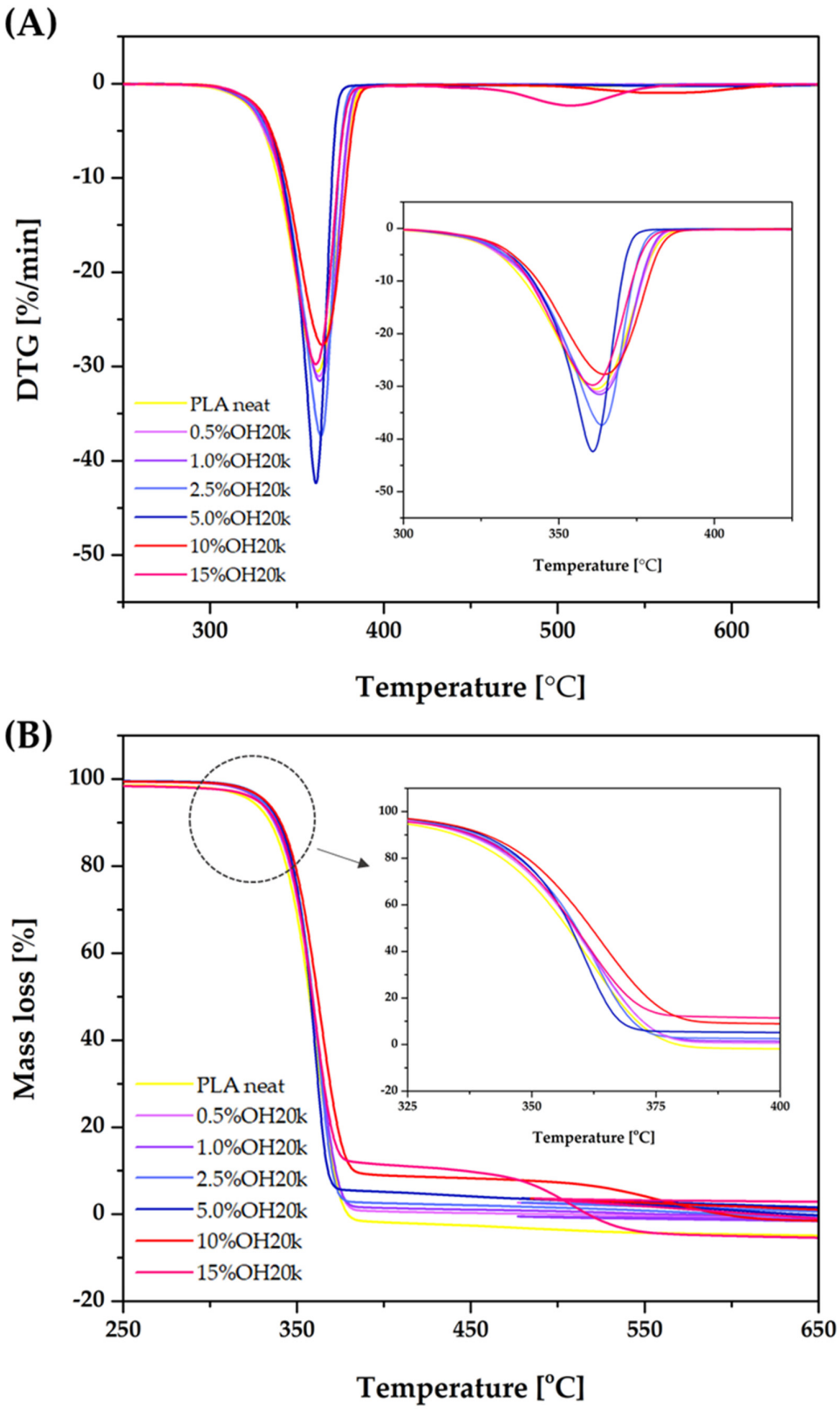


**Figure S4.** The effects of silicone content on the thermal decomposition of PLA and PLA/silicone blends: DTG (A), TGA (B) – N2 atmosphere.

### 1.5. Figure S5

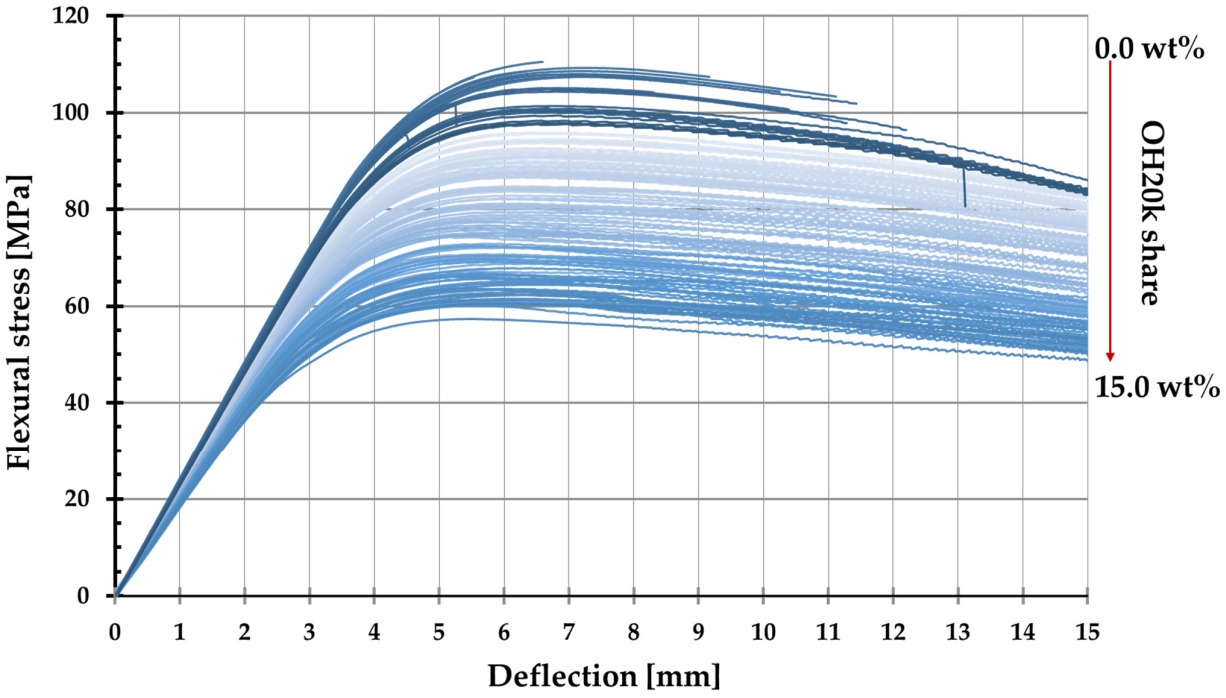


**Figure S5.** Stress-deflection behavior of PLA and its blends as a function of silicone content (0-15%) derived from automatic test station.

## 2. Tables

### 2.1. Table S1

**Table S1.** Injection molding parameters.

| **Temperature (◦C)** | **Nozzle** | **Zone 3** | **Zone 2** | **Zone 1** | **Feed** |
|---|---|---|---|---|---|
| | 200 | 195 | 195 | 190 | 40 |
| Mold temperature (◦C) | 25 | | | | |
| Holding pressure | t (s) | 0 | | 11 | |
| | p (bar) | 700 | | 1100 | |
| Clamping force (kN) | Holding pressure time (s) | | Cooling time (s) | Screw diameter (mm) | |
| 800 | 11 | | 50 | 25 | |