

Antibacterial Coatings on Cotton Fabrics Based on Rosmarinic Acid-Loaded Bio-Based Resin and Oxygen-Plasma Surface Pretreatment

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Figure S1 Schematic representation of the plasma system used for surface treatment.

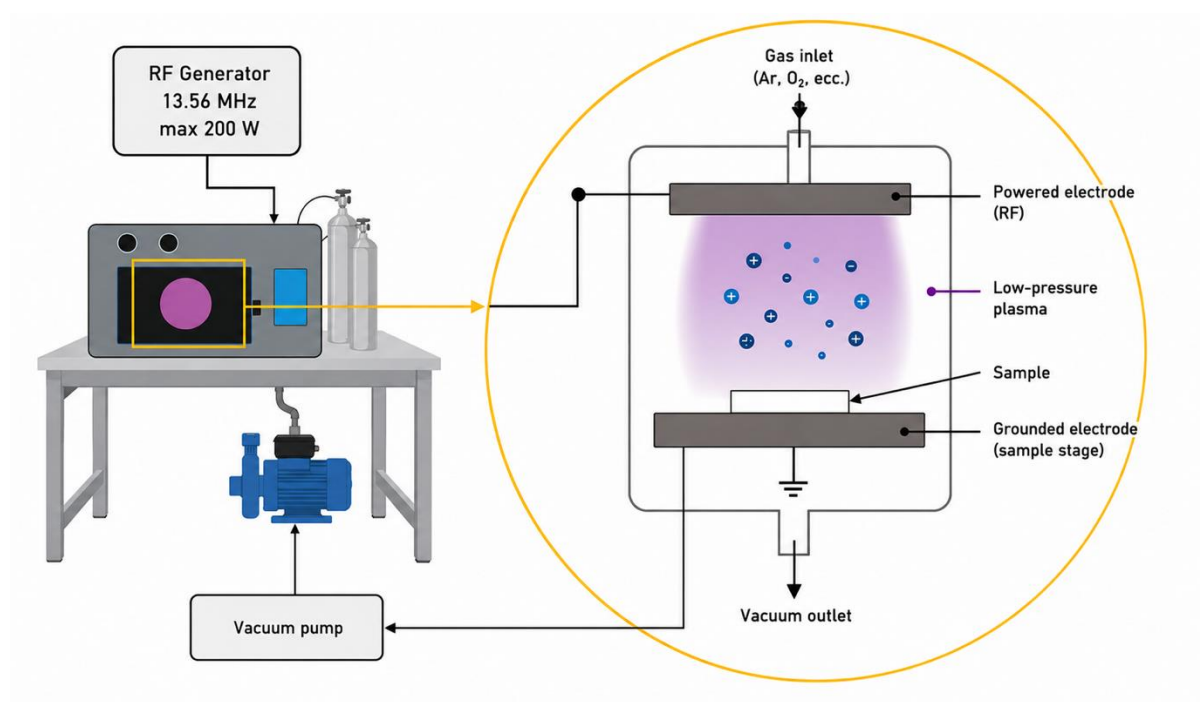


Figure S2: (I) Points analyzed on each side (A) and (B) of the cotton sample prior to plasma treatment. (II) FTIR-ATR spectra of the two sides of the cotton sample, comparing side A and side B. The characteristic spectral features discussed in the text are indicated in the figure.

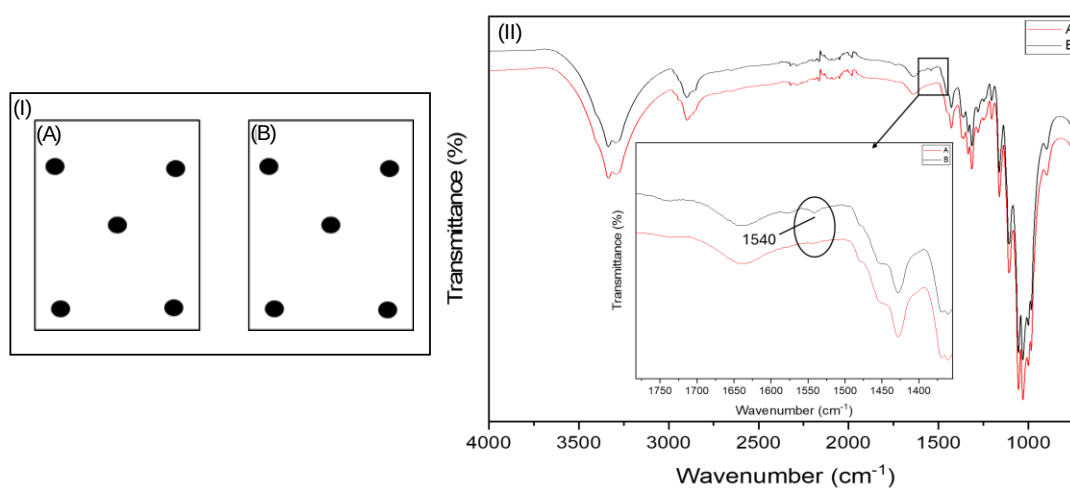


Figure S3. FTIR-ATR spectra of untreated and plasma-treated cotton: (a) full spectra; (b) magnified view of the selected region (3000–1400 cm^{-1}).

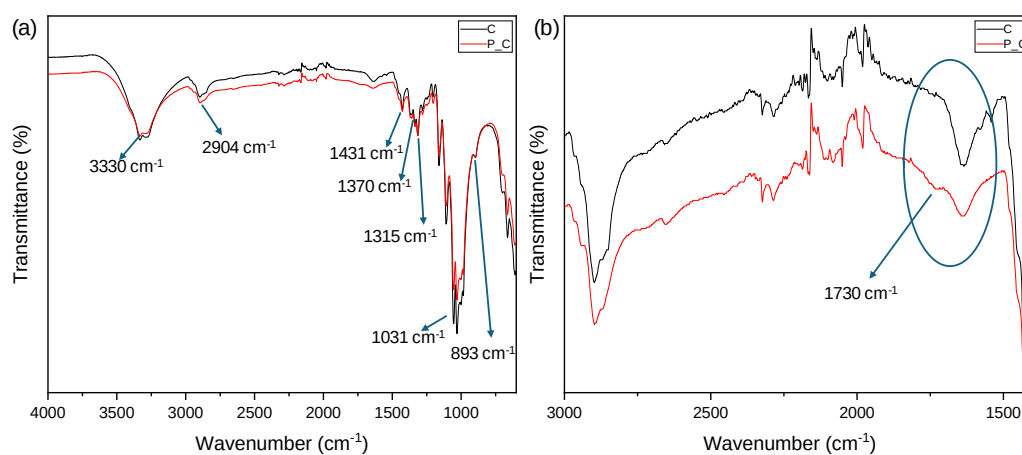


Figure S4: XPS survey spectra of untreated cotton (C) and plasma-treated cotton (P_C).

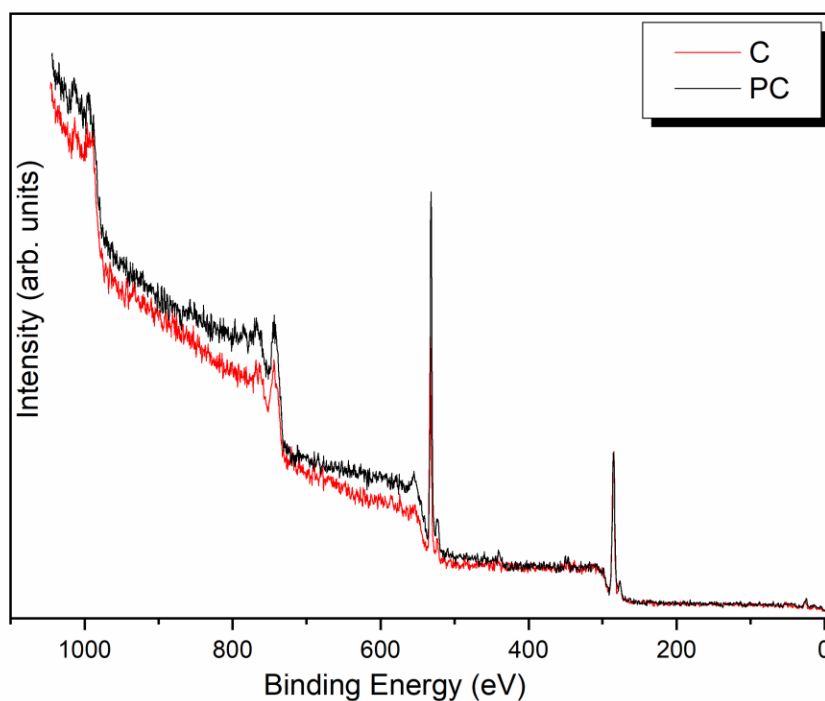


Figure S5: Thermogravimetric (TG) and derivative thermogravimetric (DTG) curves of untreated and plasma-treated cotton. Solid line: mass loss (%); dashed line: rate of mass loss

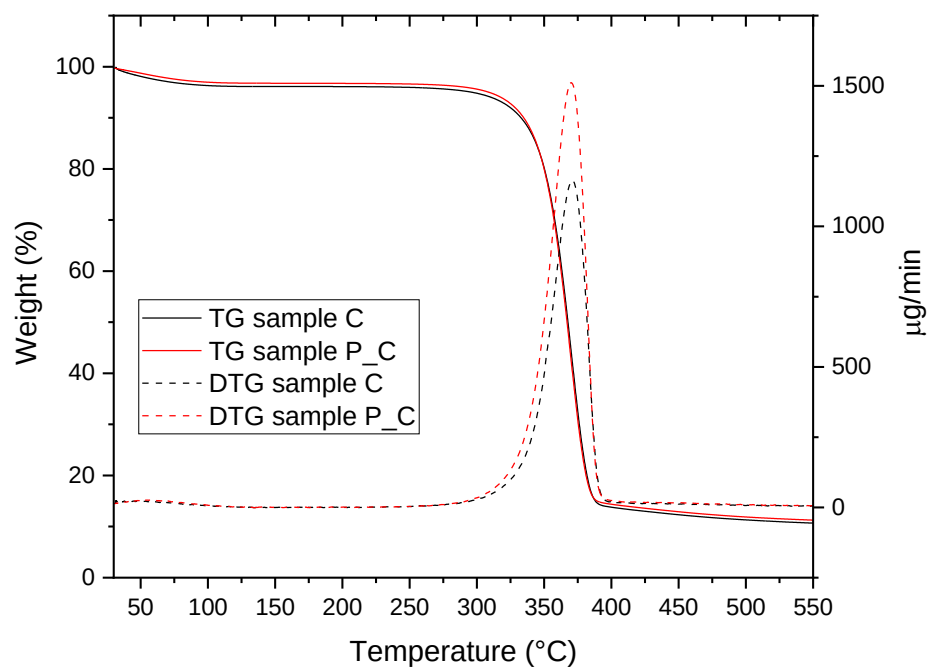


Figure S6: (I) 2nd heating runs evidencing the T_g of resin and RA-loaded resin; (II) T_g values as function of RA content. R_xRA refers to resin formulations prepared with x g L⁻¹ of rosmarinic acid in the starting coating solution.

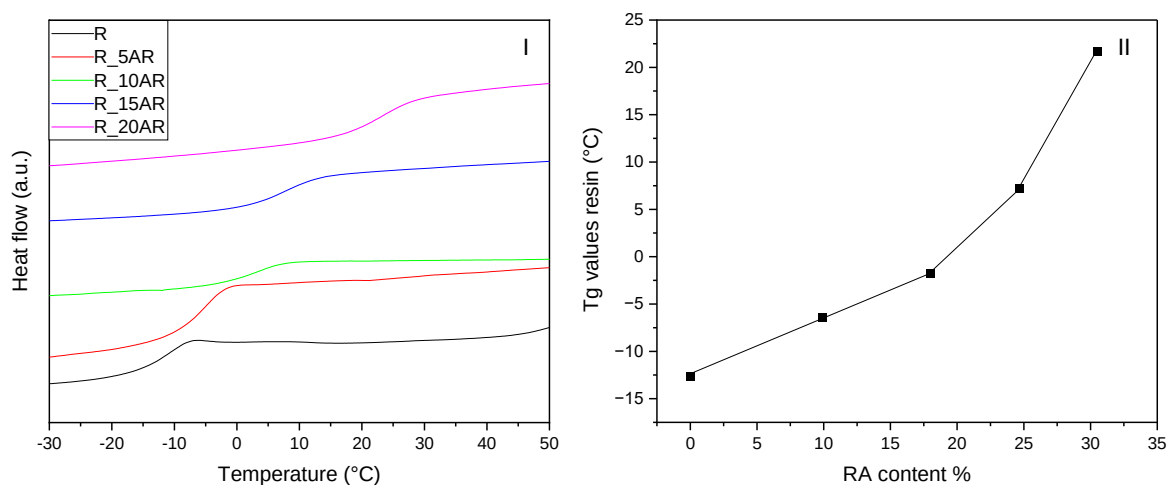


Figure S7 Pictures of prepared samples: (a) untreated, coated with resin; (b–e) untreated, coated with resin containing 5, 10, 15, and 20 g/L of RA, respectively; (f) plasma-treated, coated with resin; (g–l) plasma-treated, coated with resin containing 5, 10, 15 and 20 g/L of RA, respectively

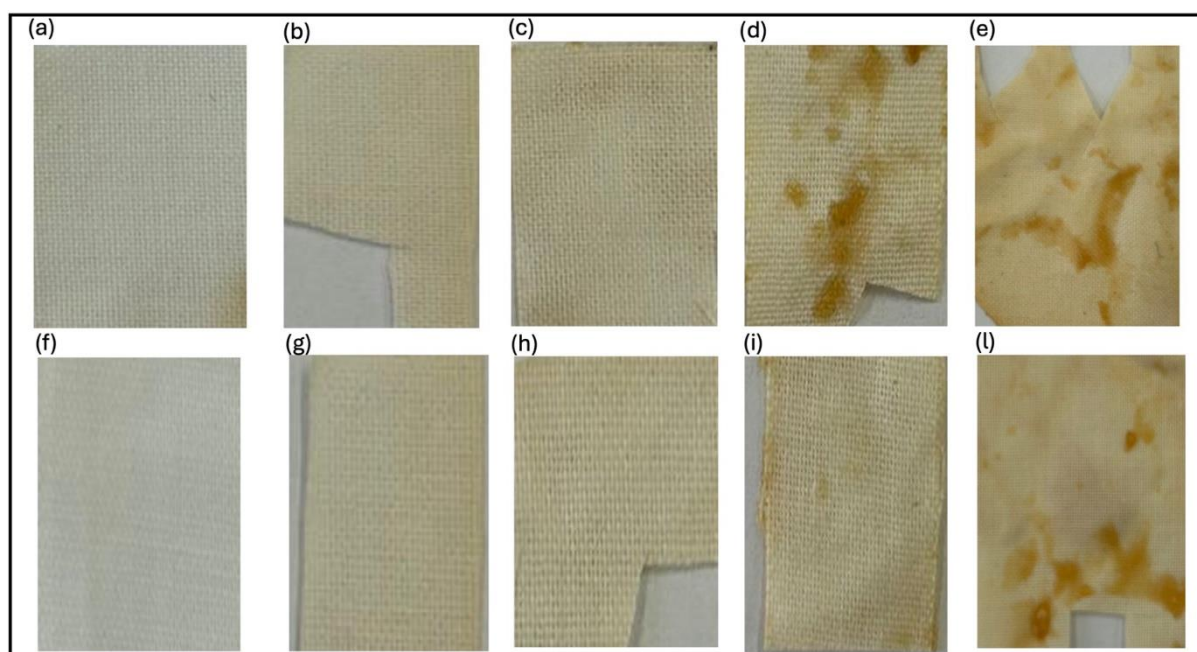


Figure S8: FTIR-ATR spectra normalized to the cotton O–H stretching band at 3333 cm^{-1} , of untreated (black lines) and plasma-treated (red lines) cotton-coated samples with a resin containing 10 g/L rosmarinic acid. Inset report the region between 4000 and 2500 cm^{-1} , highlighting the band used to normalize the spectra.

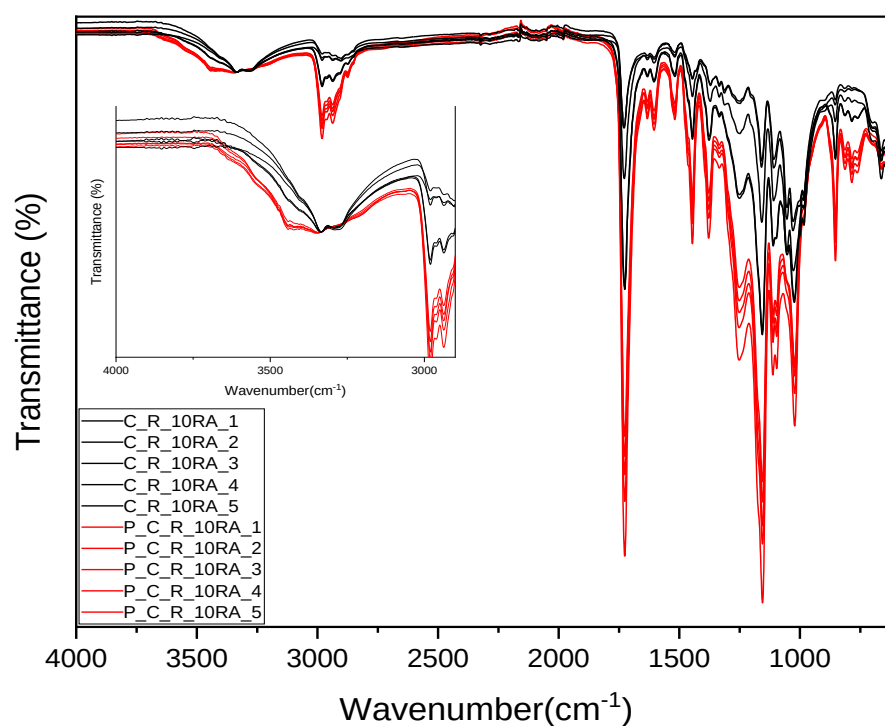


Figure S9: FTIR-ATR spectra normalized to the cotton O–H stretching band at 3333 cm^{-1} , of untreated (straight lines) and plasma-treated (dashed lines) cotton-coated samples with resin (R) and resin loaded with RA (R_RA5 and R_RA10). On the right the enlargement of the region between 1800 and 1500 cm^{-1} , highlighting the C=O stretching vibrations

