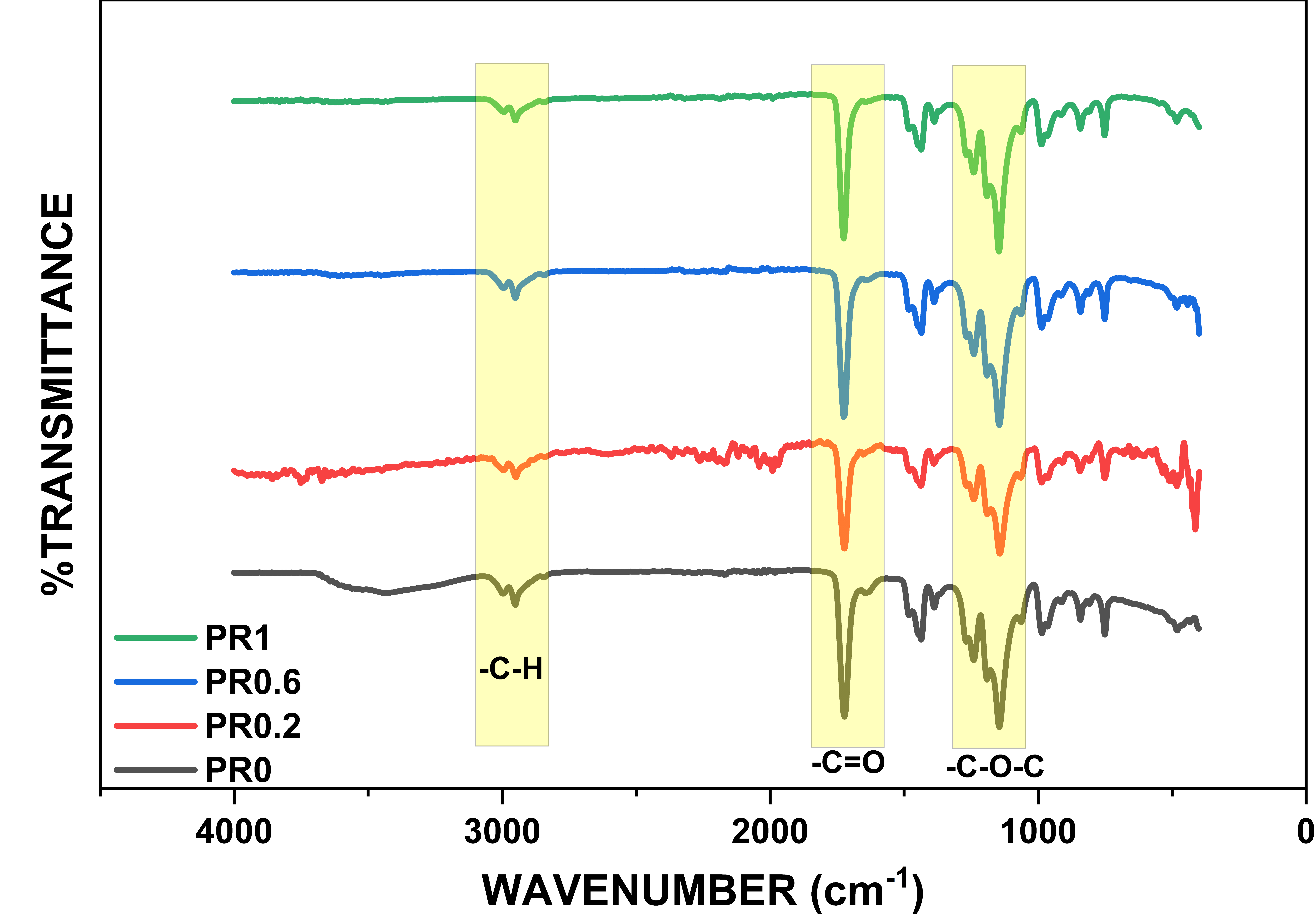
**SUPPLEMENTARY INFROMATION**

A computer diagram of a machine

Description automatically generated

**Figure 1**. The illustration of artificial nose-based QCM sensor



**Figure 2.** IR spectra for PMMA-rGO

|  |  |
| --- | --- |
| **(a)**  **(a1)** | **(b)**  **(b1)** |
| **(c)**    **(c1)** | **(d)**  **(d1)** |

**Figure 3.** TMS profiling image of the surface of PMMA-rGO coated QCM sensor in peak (yellow mark)-valley (red mark) mode (a-d) and 3D-mode (a1-d1)

|  |  |
| --- | --- |
| **(a)** | **(b)** |
| **(c)** | **(d)** |

**Figure 4.** PMMA/rGO coated QCM sensor response toward real roasted coffee aroma at different degree of roasting: (**a**) 220℃, (**b**) 225℃, (**c**) 230℃, and relationship between the amount of rGO (%wt.) in nanocomposite vs *∆f*