

Combinatorial Aerosol Assisted Chemical Vapour Deposition of a Photocatalytic Mixed SnO₂/TiO₂ Thin Film

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Electronic Supplementary Information

XRD

Whilst X-ray diffraction analysis was focused on column A and Row 4 for the purpose of combinatorial analysis XRD was undertaken for all locations. The XRD patterns for all columns are shown below.

Column B

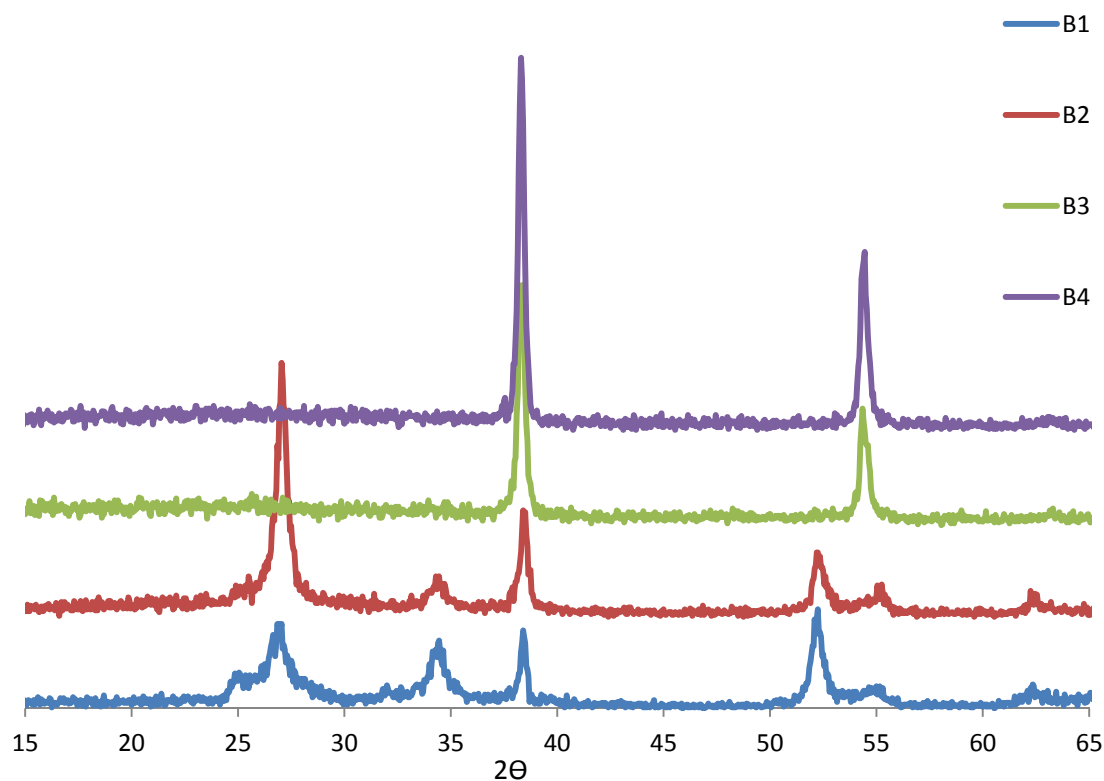


Figure 1: XRD patterns for all grid positions in column B. A progression is observed from cassiterite SnO₂, at B1, through to Anatase TiO₂ which exhibits preferential orientation at B4.

Column C

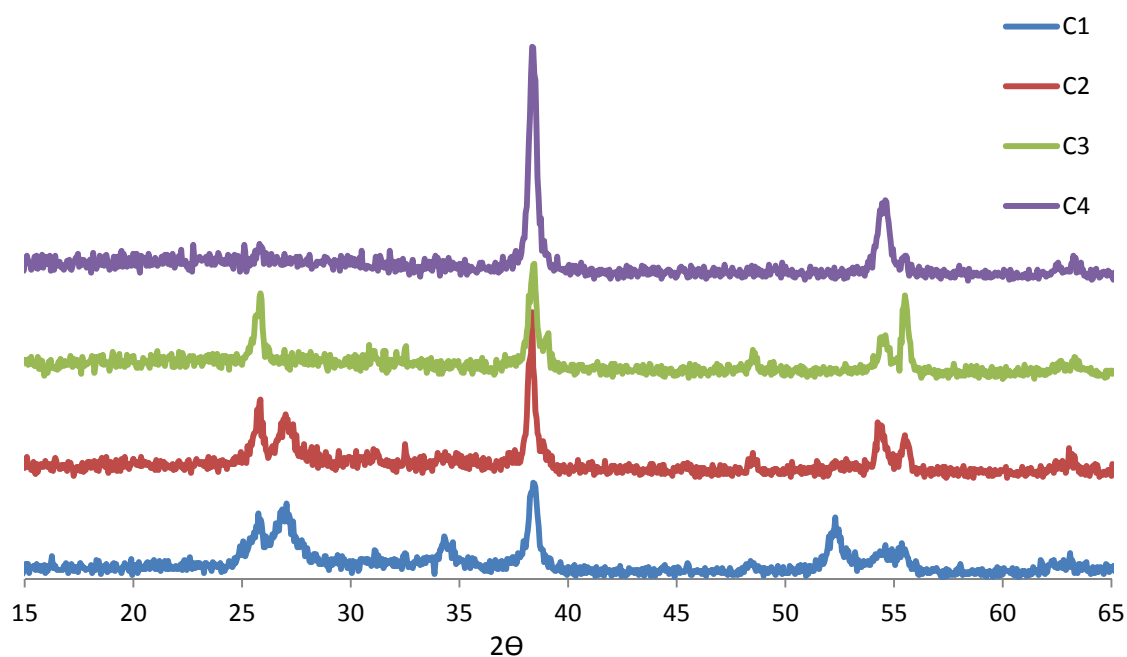


Figure 2: A similar progression can be seen in column C where C1 exhibits cassiterite SnO_2 through to preferentially orientated anatase TiO_2 in C4

Column D

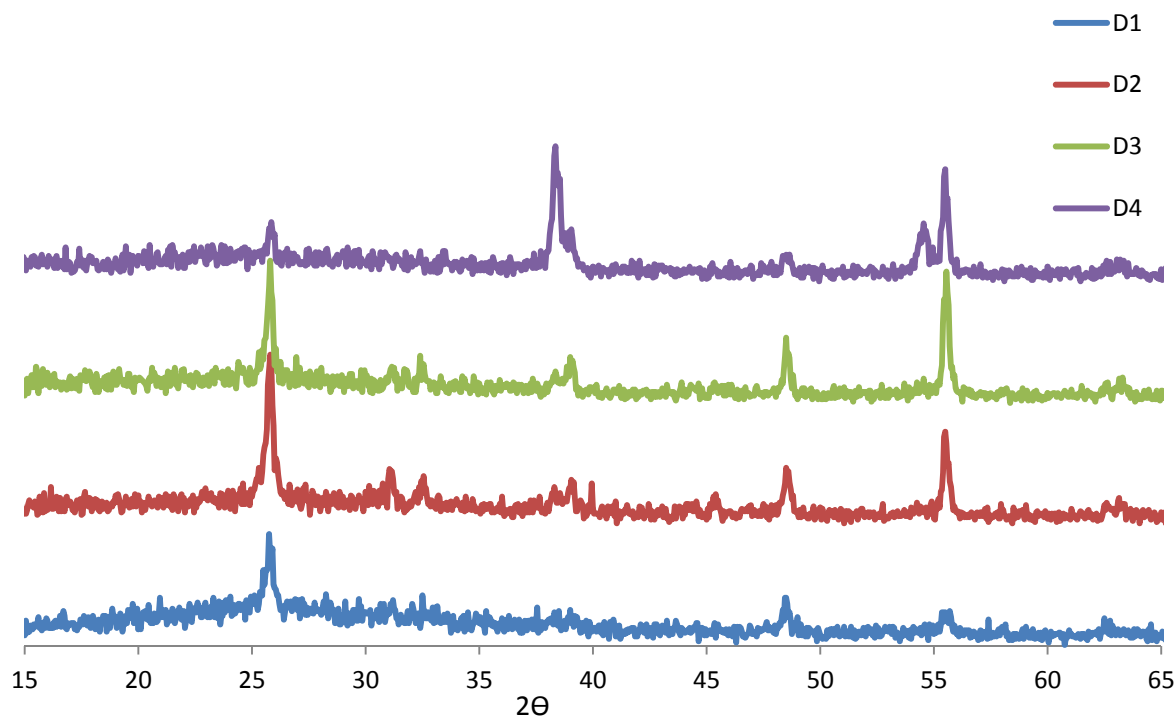


Figure 3: A progression can be seen from classical anatase TiO_2 in D1 through to preferentially orientated anatase TiO_2 in D4.

Column E

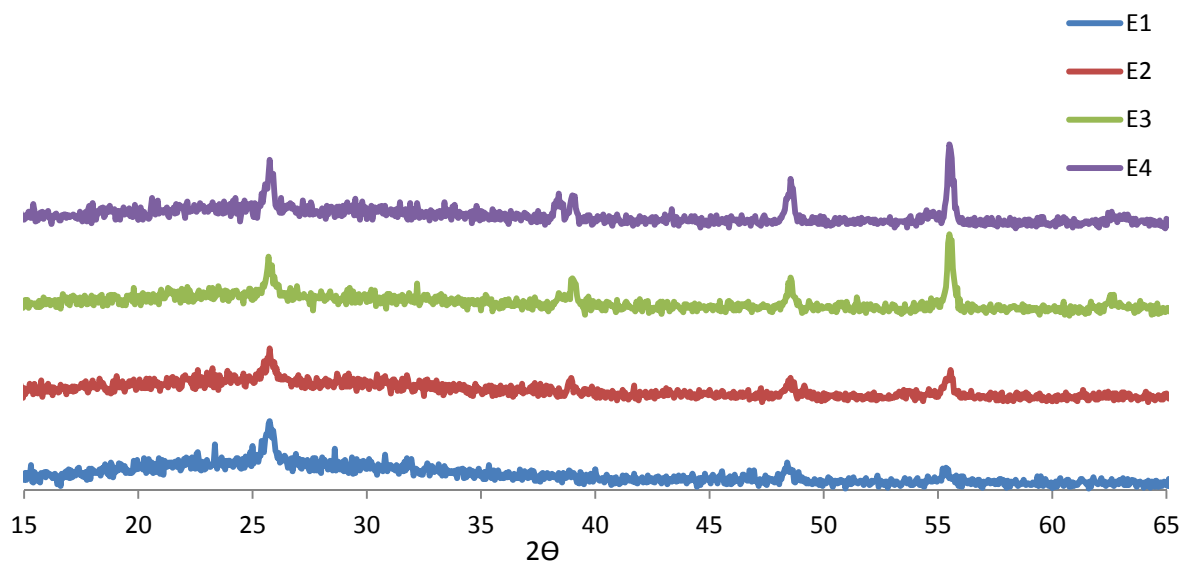


Figure 4: No change from E1 to E4 is seen and remains classical anatase TiO₂ throughout.

UV/Vis

UV-Visible spectroscopy was undertaken for all points but only spectrums in column A or Row 4 were used for swanepoel analysis to determine the thickness of the film at each grid location. The absorbance spectrums are provided below.

A1

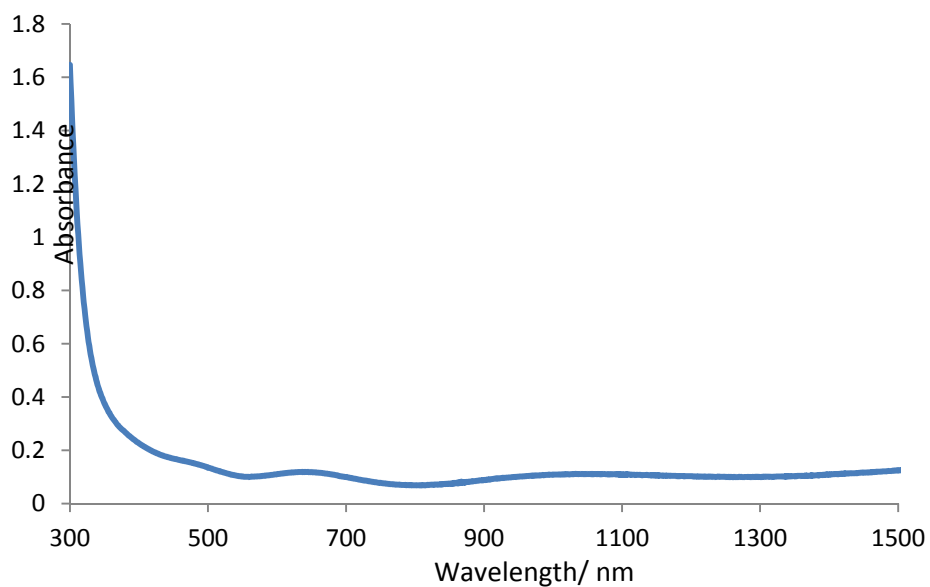


Figure 5: UV/Visible spectrum for grid position A1.

A2

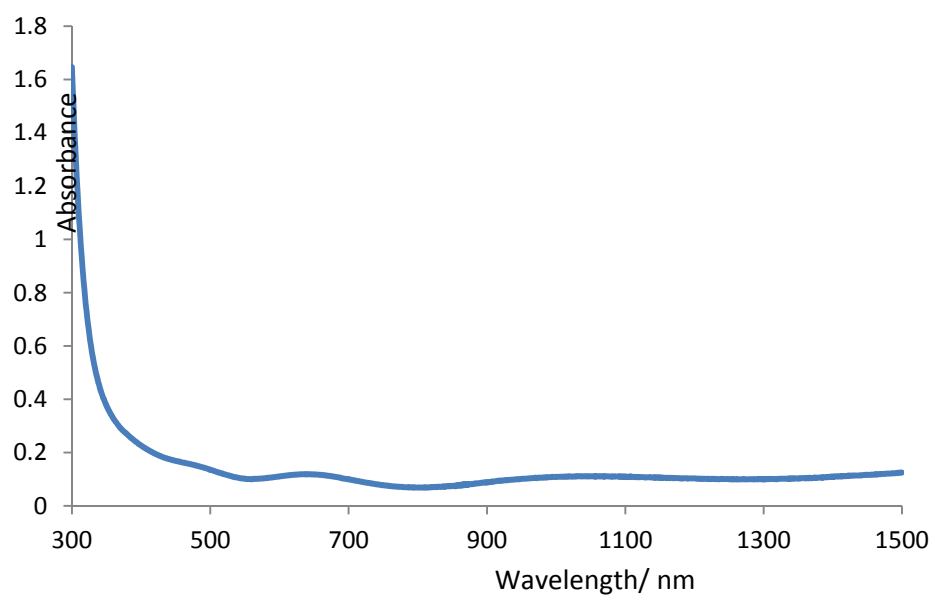


Figure 6: UV/Visible spectrum for grid position A2.

A3

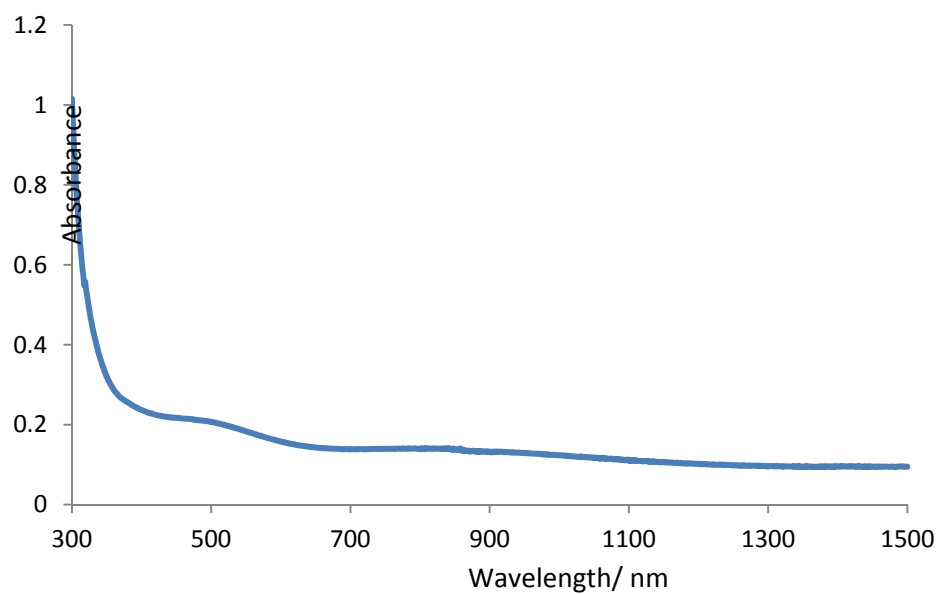


Figure 7: UV/Visible spectrum for grid position A3.

A4

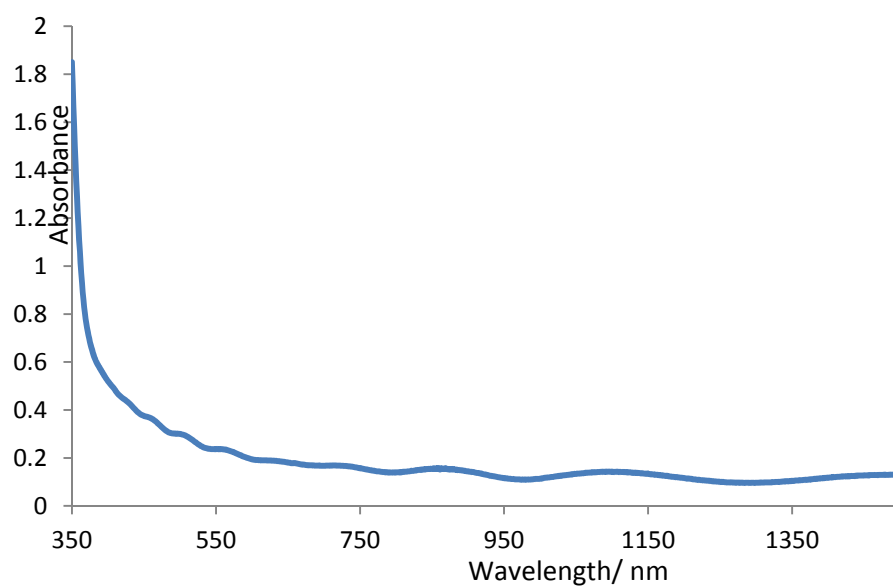


Figure 8: UV/Visible spectrum for grid position A4.

B4

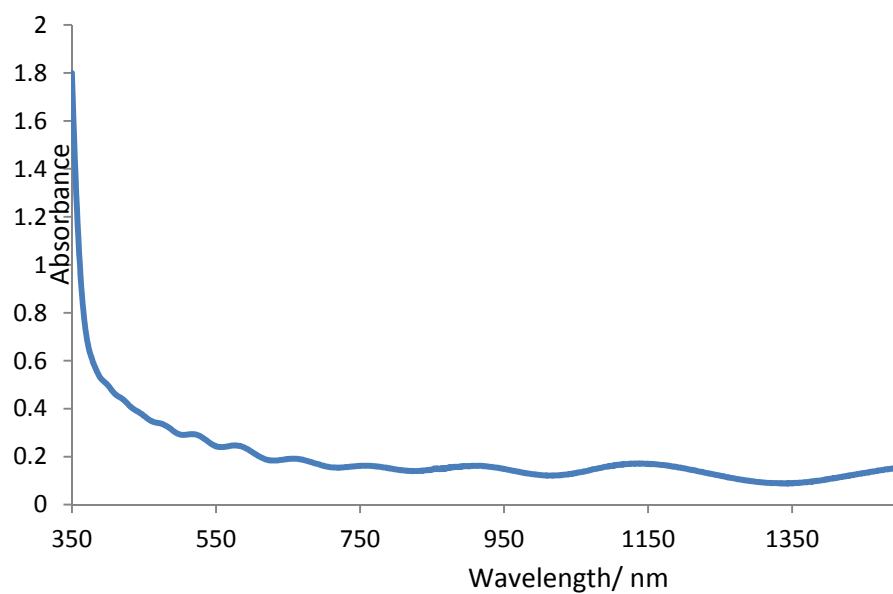


Figure 9: UV/Visible spectrum for grid position B4.

C4

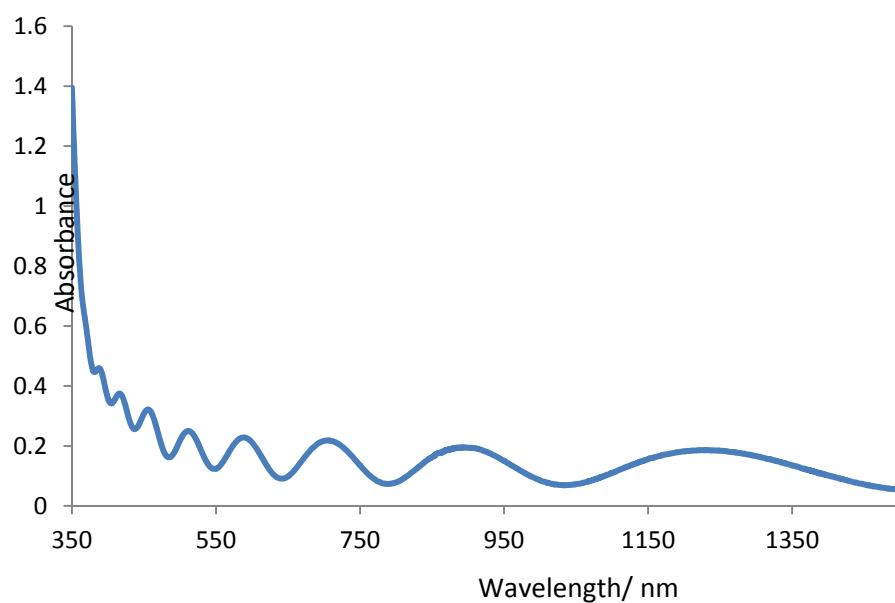


Figure 10: UV/Visible spectrum for grid position C4.

D4

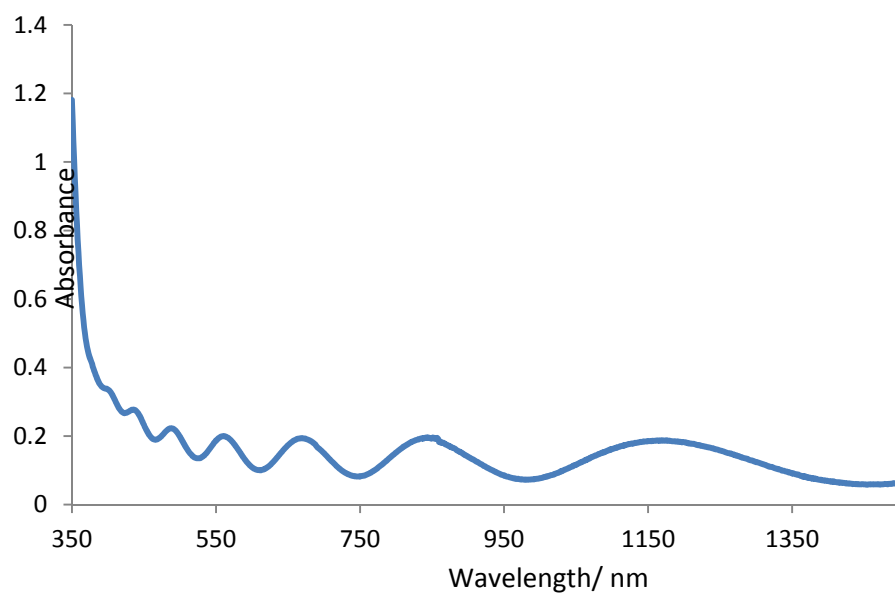


Figure 11: UV/Visible spectrum for grid position D4.

E4

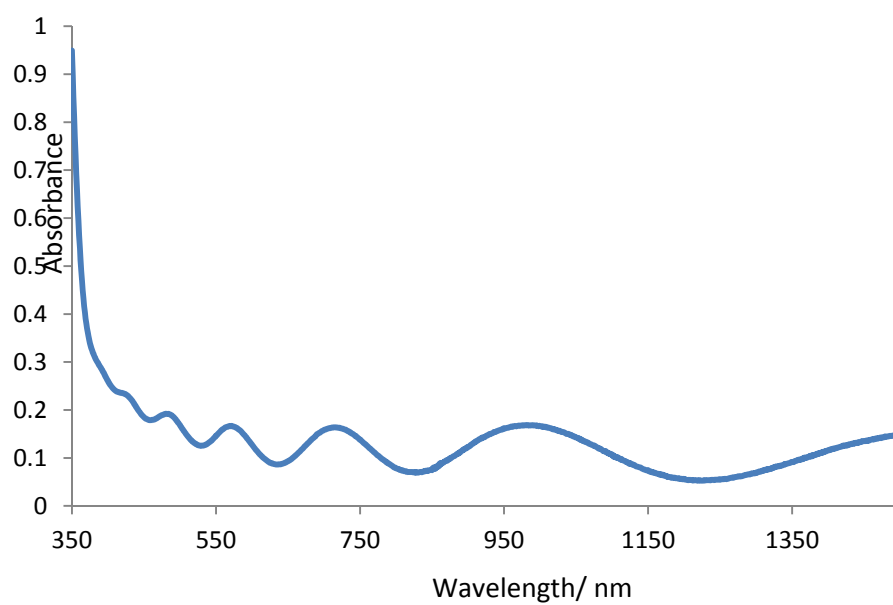


Figure 12: UV/Visible spectrum for grid position E4.