

## Electronic Supplementary Information

### Photoelectrocatalytic activity of ZnO coated nano-porous silicon by atomic layer deposition

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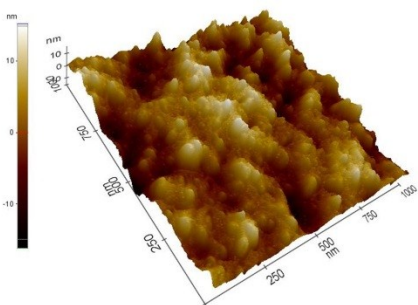
Tiruchirappalli -620024

Tamilnadu, India

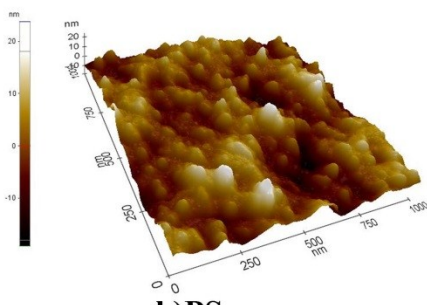
Mob.: +91 09486011492,

E-mail: [alaganviswa@gmail.com](mailto:alaganviswa@gmail.com)

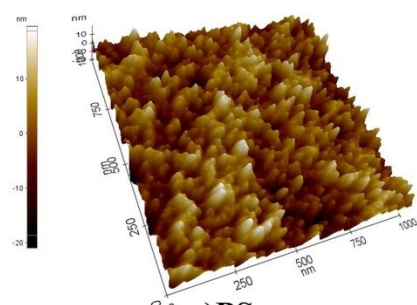
## ESI 1 AFM 3D Images of porous silicon and ZnO coated porous silicon



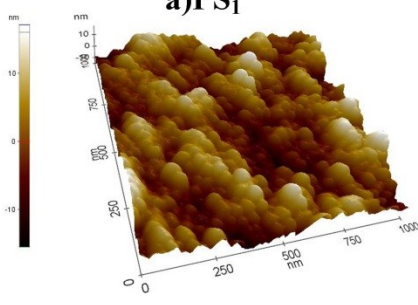
**a)PS<sub>1</sub>**



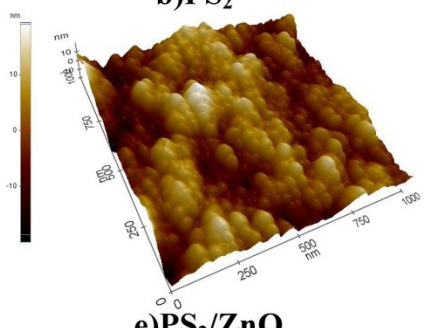
**b)PS<sub>2</sub>**



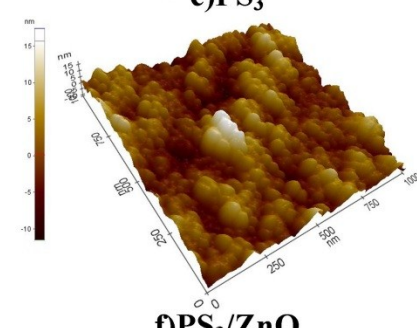
**c)PS<sub>3</sub>**



**d)PS<sub>1</sub>/ZnO**

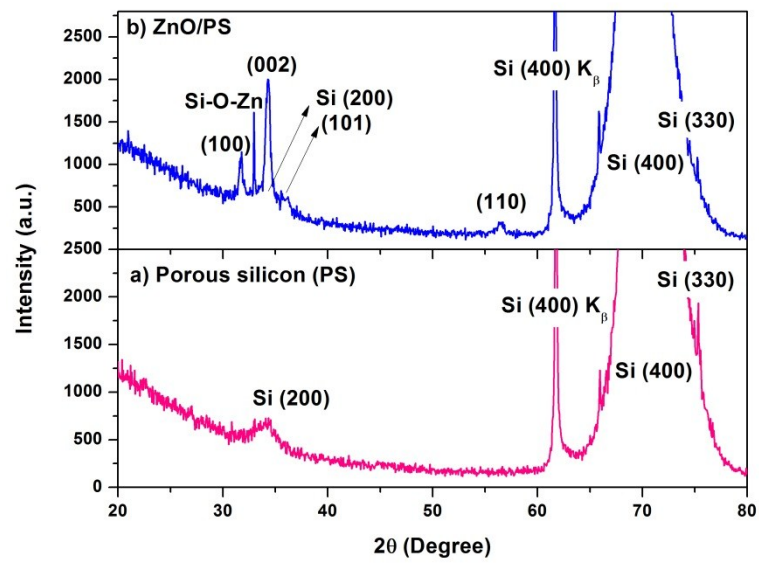


**e)PS<sub>2</sub>/ZnO**

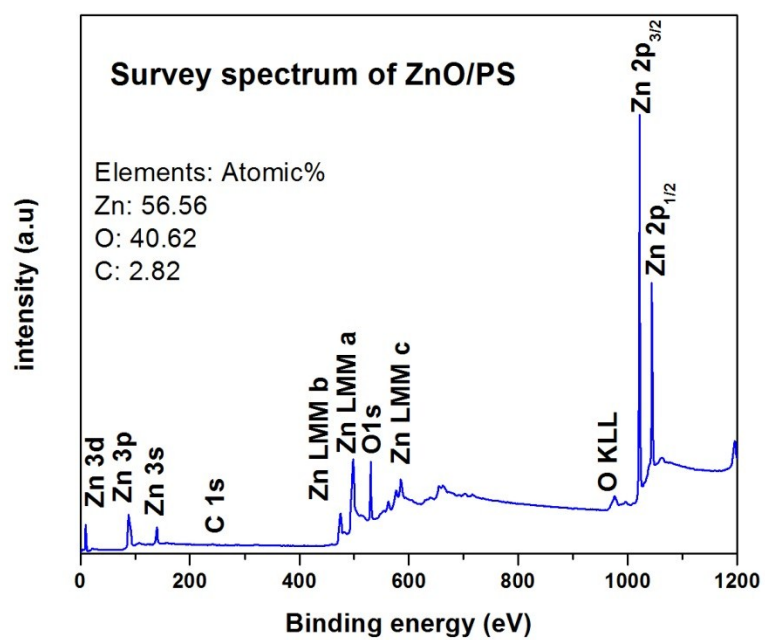


**f)PS<sub>3</sub>/ZnO**

## ESI 2 XRD pattern of porous silicon and ZnO coated porous silicon



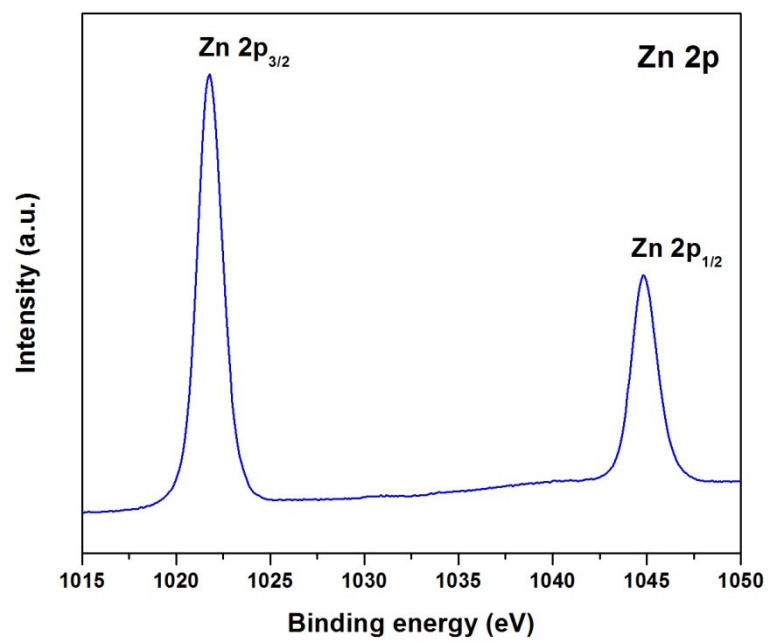
### ESI 3 XPS survey spectrum of ZnO coated porous silicon



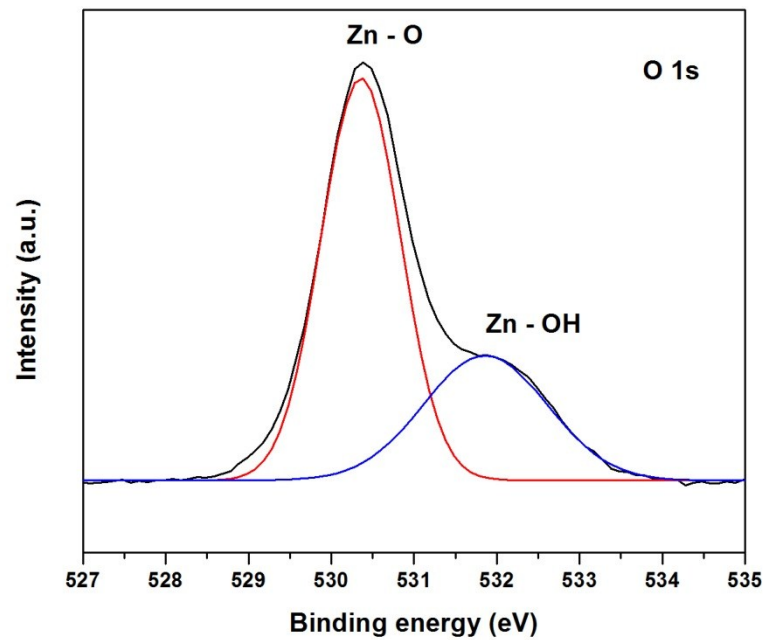
## ESI 4 XPS elemental survey

| Chemical state     | Zn | Zn | Zn  | Zn  | Zn  | O   | O   | F   | O   | Zn    | Zn    | C    |
|--------------------|----|----|-----|-----|-----|-----|-----|-----|-----|-------|-------|------|
|                    | 3d | 3p | 3s  | KLL | KLL | 1s  | KLL | 1S  | KLL | 2P3/2 | 2P1/2 | KLL  |
| Binding Energy(eV) | 10 | 89 | 139 | 475 | 498 | 530 | 586 | 664 | 976 | 1062  | 1086  | 1195 |

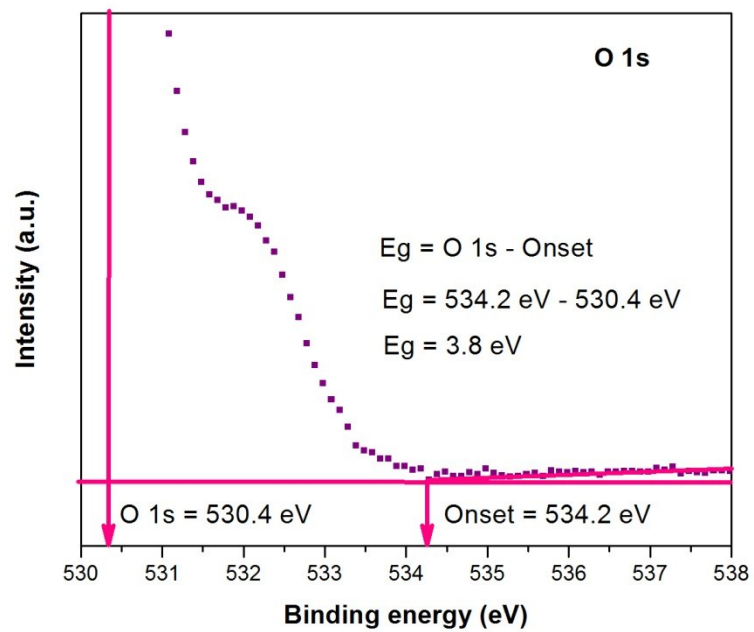
# ESI 5 XPS Zn 2p core level spectrum



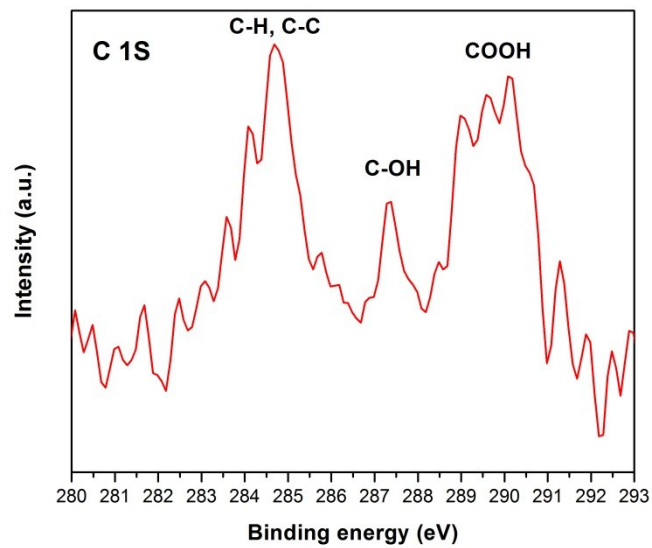
# ESI 6 XPS O 1s core level spectrum



## ESI 7 Band gap energy of ZnO



### ESI 8 XPS core level C1s spectrum



### ESI 9 DRS UV-Vis absorbance spectra of pure silicon and porous silicon

