

List of Tables

Table	Title	Page
3.1	Cell parameters of the synthesized SNP.	12
3.2	Degradation activity of MB dye with different catalysts.	15
3.3	Surface area analysis of all the samples.	16
4.1	Particle size, <i>d</i> -spacing and strain calculated for the hydrogenated HfO ₂ .	21
4.2	Surface properties of HfO ₂ air, 2h, 6h and 10h from BET analysis.	23
4.3	Binding Energy of O 1s and Hf 4f Core Levels for p-HfO ₂ and H-HfO ₂ .	24
4.4	Surface oxygen species present in p-HfO ₂ , H-HfO ₂ _6h where O _{α2} , O _{α1} , and O _β % are calculated from % area under respective peaks.	24
4.5	O ₂ -TPD parameters of the synthesized catalysts	25
4.6	TGA parameters of the as-synthesized HfO ₂ and after an accelerated thermal test (ATT)	26
5.1	Properties of Catalyst from BET and O ₂ TPD.	31
6.1	Surface porosity and chemical composition of CNB and CS.	37
6.2	Distribution of the N components in the synthesized materials	40
6.3	Photovoltaic DSSC data obtained from I-V and EIS	42
6.4	Result of dye de-loading measured with UV-vis spectrometer where, ϵ is the coefficient of absorbance with 1.4×10^4 for N ₃ dye, <i>l</i> is the length of the cuvette (1 cm)	43

...

