

References	Energy band gap (eV)	Reaction temperature (C)	Calcination temperature (C)	Reaction hour (hr)	Calcination hour (hr)	Synthesis method	Precursor	pH	Precursor concentration (M)	Nanoparticle size (nm)
[1]	3.375	50	500		1	Sol-gel	Zinc nitrate	9	0.165	21.82
[2]	3.377	100		6		Hydrothermal	Zinc acetate	8	0.1	18
[2]	3.787	80	450	5	6	Sol-gel	Zinc acetate	8	0.5	14
[3]	3.45	25		2		Green	Zinc acetate	12	0.5	21
[4]	2.57					Green	Zinc nitrate			41.23
[5]	3.5	25	300	6	0.75	Green	Zinc acetate	8	0.5	14.7
[6]	3.62	25	70	24	12	Green	Zinc acetate	7	2	15.2
[7]	3.1	80		5		Green	Zinc nitrate	7	0.3	35.8
[7]	3.12	80		5		Green	Zinc nitrate	7	0.3	30.83
[7]	3.07	80		5		Green	Zinc nitrate	7	0.3	33.1
[8]	3.23	25		2		Sol-gel	Zinc acetate	10	0.2	38.32
[8]	3.14	25		2		Sol-gel	Zinc acetate	11	0.2	36.65
[9]	3.33	25	400	4		Sol-gel	Zinc acetate	8		38.35
[9]	3.3	25	500	4		Sol-gel	Zinc acetate	8		39.28
[10]	3.43	30	80	7	10	Sol-gel	Zinc acetate	6	0.2	13.8
[10]	3.37	30	80	7	10	Sol-gel	Zinc acetate	8	0.2	18
[10]	3.32	30	80	7	10	Sol-gel	Zinc acetate	12	0.2	24.7
[10]	3.25	30	80	7	10	Sol-gel	Zinc acetate	13	0.2	33
[11]	3.31	25	100	2	12	Sol-gel	Zinc acetate	8		
[11]	3.33	25	100	2	12	Sol-gel	Zinc acetate	9		
[11]	3.3	25	100	2	12	Sol-gel	Zinc acetate	10		
[11]	3.29	25	100	2	12	Sol-gel	Zinc acetate	11		46.45
[12]	3.375	25	100	3	4	Green	Zinc acetate			21.75
[13]	3.23	60	200		3	Sol-gel	Zinc acetate	8		28
[13]	3.22	60	400		3	Sol-gel	Zinc acetate	8		39
[13]	3.2	60	500		3	Sol-gel	Zinc acetate	8		44

[14]	3.56	25	60	2	12	Green	Zinc acetate	12	0.02	21.49
[14]	3.57	25	60	2	12	Green	Zinc nitrate	12	0.05	25.26
[15]	3.48	70	40	1	12	Sol-gel	Zinc acetate	9	0.1	22.37
[15]	3.47	70	40	1	12	Sol-gel	Zinc acetate	10	0.1	21.27
[15]	3.45	70	40	1	12	Sol-gel	Zinc acetate	11	0.1	19.39
[15]	3.38	70	40	1	12	Sol-gel	Zinc acetate	12	0.1	16.11
[16]	3.3	60	600			Solvothermal	Zinc acetate		0.01	21.5
[17]	3.23	25	600		3	Solvothermal	Zinc nitrate			14.24
[17]	3.14	25	700		3	Solvothermal	Zinc nitrate			16.2
[17]	3.12	25	800		3	Solvothermal	Zinc nitrate			28
[18]	3.13	120	500	0.3		Sol-gel	Zinc acetate		0.6	45.8
[18]	3.15	120	650	0.3		Sol-gel	Zinc acetate		0.6	48
[19]	2.99	80	400	2	2	Solvothermal	Zinc acetate			32.5
[20]	2.95	140	60	12	6	Solvothermal	Zinc acetate	7	0.1	38
[21]	3	80	100	12	12	Solvothermal	Zinc acetate			40.5
[22]	3.349	150	60	3		Solvothermal	Zinc acetate	9	0.1	28.79
[22]	3.88	150	60	12		Solvothermal	Zinc acetate	9	0.1	24.28
[23]	3.23	140		4		Solvothermal	Zinc nitrate			16.2
[24]	3.15	50	160		48	Solvothermal	Zinc acetate	7		46
[25]	3.27	60	170	0.5	18	Solvothermal	Zinc acetate	9		45
[26]	3.386	25	150	0.3	8	Solvothermal	Zinc acetate		0.1	24.2
[26]	3.401	25	150	0.3	8	Solvothermal	Zinc acetate		0.1	18.9
[26]	3.408	25	150	0.3	8	Solvothermal	Zinc acetate		0.1	14.7
[27]	3.246	60		24		Solvothermal	Zinc acetate	7	0.5	45.55
[27]	3.267	60		24		Solvothermal	Zinc acetate	7	0.5	42.05
[28]	3.42					Solvothermal	Zinc acetate		0.45	24.02
[29]	2.97	70	500	2	2	Green	Zinc acetate	4		27.38
[29]	3.69	70	500	2	2	Green	Zinc acetate	6		22.98

[29]	3.9	70	500	2	2	Green	Zinc acetate	9.5		25.39
[29]	3.97	70	500	2	2	Green	Zinc acetate	11		22.17
[30]	3.245	80	80	2		Sol-gel	Zinc nitrate	9	0.1	36.36
[30]	3.249	80	80	2		Sol-gel	Zinc nitrate	11	0.1	32.32
[30]	3.306	80	80	2		Sol-gel	Zinc nitrate	13	0.1	27.27
[30]	3.25	80	80	2		Sol-gel	Zinc acetate	11	0.1	31.16
[30]	3.245	80	80	2		Sol-gel	Zinc acetate	13	0.1	41.77
[31]	3.2	65	400	1	5	Sol-gel	Zinc acetate		0.15	16
[32]	2.7	80	150	3	2	Green	Zinc nitrate	8	0.1	35.202
[32]	2.692	80	250	3	2	Green	Zinc nitrate	8	0.1	35.203
[32]	2.672	80	350	3	2	Green	Zinc nitrate	8	0.1	42.249
[32]	2.645	80	450	3	2	Green	Zinc nitrate	8	0.1	43.308
[33]	3.349	80	400	12	2	Sol-gel	Zinc nitrate		0.5	24
[33]	3.295	80	500	12	2	Sol-gel	Zinc nitrate		0.5	33
[33]	3.278	80	600	12	2	Sol-gel	Zinc nitrate		0.5	44
[34]	3.274	90	400	2	8	Sol-gel	Zinc acetate			30.3
[35]	3.09	80	600			Green	Zinc nitrate			43.82
[35]	3.13	80	600			Green	Zinc nitrate			37.25
[35]	3.16	80	800			Green	Zinc nitrate			34.24
[36]	3.25	60	500	3	2	Green	Zinc nitrate	8		21.61
[37]	3.18	60	500	3	2	Green	Zinc acetate	8		36.75
[38]	3.79	80	500	2	4	Sol-gel	Zinc nitrate	7		40
[38]	3.16	25	80		12		Zinc acetate	5		18
[38]	3.19	25	80		12		Zinc acetate	7		21
[38]	3.18	25	80		12		Zinc acetate	8		23
[38]	3.17	25	80		12		Zinc acetate	10		20
[38]	3.19	25	80		12		Zinc acetate	7		23
[38]	3.18	25	80		12		Zinc acetate	8		20

[38]	3.15	25	80		12		Zinc acetate	10		20
[39]	3.15	25	80		12		Zinc acetate	12		20
[39]	3.39	25	80	0.5	12	Solvothermal	Zinc nitrate		0.5	24
[39]	3.32	25	80	0.5	12	Solvothermal	Zinc nitrate		0.5	23
[40]	3.4	25	80	0.5	12	Solvothermal	Zinc nitrate		0.5	20
[40]	3.236	80	80	12		Solvothermal	Zinc acetate	7	0.45	42.13
[41]	3.234	80	80	12		Solvothermal	Zinc acetate	7	0.45	45.14
[41]	3.216	140	60	1	24	Hydrothermal	Zinc acetate	9	0.4	33.67
[41]	3.213	140	60	1	24	Hydrothermal	Zinc acetate	9	0.4	35.34
[42]	3.22	160	60	1.5	24	Hydrothermal	Zinc acetate	9	0.4	43.04
[43]	3.47	25	50	2	48	Green	Zinc acetate	12	0.15	19.51
[44]	3.29	70	380	1	1	Sol-gel	Zinc acetate			30.6
[45]	3.27	120	450	3	2	Sol-gel	Zinc acetate	6	0.6	24
[45]	3.05	25	60	2	12	Green	Zinc acetate	10	0.02	40
[45]	3.08	25	60	2	12	Green	Zinc acetate	11	0.02	33.3
[46]	3.14	25	60	2	12	Green	Zinc acetate	12	0.02	30.7
[46]	3.42	80	400		1	Green	Zinc nitrate		0.4	12.5
[46]	3.38	80	600		1	Green	Zinc nitrate		0.4	20
[47]	3.35	80	800		1	Green	Zinc nitrate		0.4	22.5
[47]	3.23	35	250	0.3	4	Sol-gel	Zinc acetate		0.6	33.2
[48]	3.25	35	250	0.3	4	Green	Zinc acetate			25.97
[49]	3.15	90	700		4	Sol-gel	Zinc nitrate	5		40
[49]	3.26	25	90	2	24	Hydrothermal	Zinc nitrate	12	1	21.13
[49]	3.25	25	190	2	24	Hydrothermal	Zinc nitrate	12	1	28.59
[50]	3.23	25	550	2	24	Hydrothermal	Zinc nitrate	12	1	32.41
[51]	3.21	70	450	1	4	Sol-gel	Zinc acetate	8	0.15	19.32
[51]	3.19	30	400	1	2	Sol-gel	Zinc acetate		0.25	25
[52]	3.12	30	400	1	2	Sol-gel	Zinc acetate		0.25	27
[52]	3.3	50	300			Sol-gel			0.3	

[53]	3.269	60	400		2	Sol-gel	Zinc acetate		0.15	21.76
[53]	3.257	60	500		2	Sol-gel	Zinc acetate		0.15	25.72
[53]	3.359	60	600		2	Sol-gel	Zinc acetate		0.15	31.42
[53]	3.356	60	700		2	Sol-gel	Zinc acetate		0.15	35.42
[54]	3.11		500		2	Sol-gel	Zinc acetate		0.25	27.92
[54]	3.12		500		2	Sol-gel	Zinc acetate		0.25	37.14
[54]	3.08		500		2	Sol-gel	Zinc acetate		0.25	34
[55]	3.18	60	400	1	2	Sol-gel	Zinc nitrate	12	0.1	17
[56]	3.28	40	450	2	4	Sol-gel	Zinc nitrate	7	0.2	24.7
[57]	3.29	75	500	8		Sol-gel	Zinc nitrate			49
[58]	3.81	25	100	4	4	Sol-gel	Zinc acetate		0.1	
[58]	3.8	25	300	4	4	Sol-gel	Zinc acetate		0.1	
[58]	3.56	25	100	8	4	Sol-gel	Zinc acetate		0.1	
[58]	3.49	25	300	8	4	Sol-gel	Zinc acetate		0.1	
[58]	3.42	25	100	12	4	Sol-gel	Zinc acetate		0.1	
[58]	3.36	25	300	12	4	Sol-gel	Zinc acetate		0.1	
[58]	3.34	25	100	16	4	Sol-gel	Zinc acetate		0.1	
[58]	3.12	25	300	16	4	Sol-gel	Zinc acetate		0.1	
[59]	3.31	80	400	10	8	Sol-gel	Zinc nitrate			21
[59]	3.28	80	500	10	8	Sol-gel	Zinc nitrate			36
[59]	3.28	80	600	10	8	Sol-gel	Zinc nitrate			42
[60]	3.09	25	300			Sol-gel	Zinc acetate			27.9
[61]	3.15	60	400	1	1	Sol-gel	Zinc acetate		0.35	24.7
[61]	2.96	60	500	1	1	Sol-gel	Zinc acetate		0.35	40.45
[62]	4.1	32	85		24	Green	Zinc nitrate	12	0.1	18
[62]	3.78	32	85		24	Green	Zinc acetate	12	0.1	20
[63]	2.69	60	400	1	1	Green	Zinc nitrate			38.63
[64]	2.7	25	100	8	2	Sol-gel	Zinc acetate	8	0.75	28

[64]	2.87	25	100	8	2	Sol-gel	Zinc acetate	9	0.75	25
[64]	3.31	25	100	8	2	Sol-gel	Zinc acetate	10	0.75	29
[64]	3.47	25	100	8	2	Sol-gel	Zinc acetate	11	0.75	35
[65]	3.42		100	2	8	Sol-gel	Zinc acetate		0.5	42.63
[66]	3	65	400	0.6	2	Green	Zinc nitrate		0.01	32.32
[67]	3.179	80	600	6	2	Sol-gel	Zinc nitrate			22.99
[68]	3	70	600	2	2	Green	Zinc nitrate	4.5		18.82
[69]	3.24	60	500	3	2		Zinc nitrate		0.1	35
[70]	3.75	85	350	2	2	Green	Zinc acetate	10	0.05	46.5
[71]		60	350	1	3	Green	Zinc acetate		0.2	36

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