

## LIST OF TABLES

TABLE		PAGE
2.1	The aluminum and aluminum oxide were synthesized by laser ablation in liquid	5
2.2	Crystal structure of aluminas	8
2.3	Selected properties of aluminas	10
2.4	Recommendations for choosing alumina powders	11
2.5	Notation given to the quantum numbers which describe orbital angular momentum	35
2.6	The relationship between quantum numbers, spectroscopists' notation and X ray notation	36
4.1	The curve fit of laser power output using MATLAB	47
4.2	Approximation of pulsed power output to rectangular power output at 1, 3 and 5 J in different voltages	53
4.3	Laser fluences and power densities of experiments	59
4.4	The particle size distribution of the alumina nanoparticles at 300 V in all energies	61
4.5	Average and dominant size of nanoparticles at 300 V in different energies	62
4.6	The particle size distribution of the alumina nanoparticles at 400, 500 V in all energies	63
4.7	Average and dominant size of nanoparticles at 400 V in different energies	64
4.8	Average and dominant size of nanoparticles at 500 V in different energies.	65
4.9	The particle size distribution of the alumina nanoparticles at 300 V, 1 J in different repetition rates	67
4.10	Average and dominant size of nanoparticles at 300 V in different repetition rates.	68
4.11	EDS results of chemical compositions at 300 V	69
4.12	XPS results of chemical compositions at 300 V	76