

Index

Abstract (Chinese Version).....	i
Abstract (English Version).....	iv
Introduction.....	1
Chapter 1. Theoretical Backgrounds.....	3
1.1 Raman scattering.....	3
1.1.1 InN structure.....	3
1.1.2 Lattice vibrations of the wurtzite InN.....	4
1.2 The X-ray diffraction.....	9
1.3 Photoluminescence.....	11
Chapter 2. Experiments.....	15
2.1 Sample Preparation.....	15
2.2 Micro-Raman system.....	18
2.3 Micro-PL system.....	20
Chapter 3. Results and Discussion.....	22
3.1 The X-ray diffraction results	22
3.2 The Raman scattering of uncapped InN (dots).....	28
3.3 The residual thermal strain of InN dots due to growth temperature.	31
3.4 The PL results of InN dots.....	36
3.4.1 Quantum confinement effect.....	38
3.4.2 Strain effect.....	41
3.5 The capping effect.....	45

Chapter 4. Conclusion.....48

Reference.....49

