

Table of Contents

	3-4. Poloidal Mode Analysis in Toroidal Magnetic Field	... 48
	3-5. Measurement of Ion Temperature	... 52
	Chapter IV. Ion Temperature Anomaly and Enhanced Plasma Resistance	
	4-1. Observation of Ion Temperature Anomaly	... 59
	4-2. Measurement of Ion Temperature Profile	... 63
	4-3. Plasma Resistance and Ion Temperature	... 69
	4-4. Enhanced Plasma Resistance and Ion Temperature Anomaly due to MHD activity	... 73
	4-5. Relation between Ion Temperature and Soft X-ray Profile	... 79
	Chapter V. Discussion and Conclusion	
	5-1. Energy Balance of RFP plasma	... 84
	5-2. Comparison between Ion Temperature Behavior and Expectation of Model	... 87
	5-3. Mechanism of Ion Heating	... 92
	5-4. Conclusion	... 98
	Reference	... 99
	Appendix-A	... 102
	Appendix-B	... 104

	Abstract	... i
	Acknowledgement	... iii
	Table of Contents	... iv
	List of Figures and Tables	... vi
Chapter 0.	Introduction	... 1
Chapter I.	Dynamics and Statics of Reversed Field Pinch Plasma	
1-1.	Models of RFP Configuration	... 5
1-2.	Statics of RFP Plasma	... 9
1-3.	Dynamics of Formation and Sustainment of RFP Configuration	... 13
Chapter II.	Experimental Devices	
2-1.	REPUTE-1 Device	... 15
2-2.	Diagnostics	... 18
2-3.	Procedure for Ion Temperature Measurement	... 20
2-4.	Optical Fiber System for Measurement of Ion Temperature Profile	... 24
Chapter III.	Basic Property of REPUTE-1 RFP Discharges	
3-1.	Dependence of Property of REPUTE-1 RFP on Plasma Current	... 29
3-2.	Current Peaking Parameter Estimation Based on Modified Bessel Function Model	... 34
3-3.	Peaking Parameter of Soft X-ray	... 42