

Rings Close to Regular

by

Askar Tuganbaev

*Moscow Power Engineering Institute,
Technological University,
Moscow, Russia*



KLUWER ACADEMIC PUBLISHERS
DORDRECHT / BOSTON / LONDON

Contents

Preface	vii
Symbols	xii
1 Some Basic Facts of Ring Theory	1
1. Preliminaries	1
2. Finiteness Conditions and the Jacobson Radical	14
3. Semiprime and Reduced Rings	32
4. Series and Polynomials	40
5. Rings of Quotients	53
2 Regular and Strongly Regular Rings	67
6. Regular Modules and Rings	67
7. Biregular and Strongly Regular Rings	73
8. Modules over Regular Rings	81
9. Regular Group Rings	87
10. Regular Laurent Series Rings	94
11. Pierce Stalks of Regular Rings	99
12. Regular Quaternion Algebras	106
3 Rings of Bounded Index and I_0-rings	113
13. Nonsingular and Finite-dimensional Rings	113
14. Rings of Bounded Index	126
15. I_0 -rings	131
16. Semiperfect Rings	138

4	Semiregular and Weakly Regular Rings	153
18.	Semiregular Modules	153
19.	Semiregular Rings and Continuous Modules	160
20.	Weakly Regular Rings	169
21.	Semi-Artinian and Perfect Rings	179
22.	V -rings	182
5	Max Rings and π-regular Rings	187
23.	Strongly π -regular Rings	187
24.	π -regular Rings of Bounded Index	195
25.	Distributively Generated Rings	201
26.	Max Rings	207
27.	Max Rings and Rings of Quotients	220
6	Exchange Rings and Modules	229
28.	Exchange Modules	229
29.	Exchange Rings	242
30.	Rings of Stable Range One	250
31.	Continuous and Quasi-projective Modules	264
32.	Pierce Stalks of Exchange Rings	270
33.	Pure-injective Modules	274
7	Separative Exchange Rings	279
34.	Separativity, Strong Separativity, and Refinement Monoids	280
35.	Stable Range	293
36.	Diagonalization of Matrices	296
37.	Separative Regular Rings	305
38.	K_1 of Separative Exchange Rings	308
	Bibliography	314
	Index	348