

## Contents

ABSTRACT .....	4
SOUHRN .....	5
LIST OF PAPERS .....	6
THEORETICAL BACKGROUND.....	7
1. RHEOLOGY AND ELECTORRHEOLOGICAL PHENOMENON .....	7
1.1 STEADY SHEAR FLOW .....	7
1.2 DYNAMIC SHEAR FLOW .....	10
2. FACTORS INFLUENCING ER EFFECT .....	13
2.1 ELECTORRHEOLOGICAL SUSPENSIONS .....	13
2.1.1 <i>Liquid continuous phase</i> .....	13
2.1.2 <i>Dispersed phase</i> .....	13
2.1.3 <i>Surfactants, additives</i> .....	17
2.2 EXTERNAL PARAMETERS INFLUENCING THE ELECTORRHEOLOGICAL EFFECT .....	20
2.2.1 <i>Electric field strength</i> .....	20
2.2.2 <i>Frequency of electric field</i> .....	21
2.2.3 <i>Temperature</i> .....	21
3. ELECTORRHEOLOGICAL MECHANISM MODELS .....	22
THE AIMS OF THE DOCTORAL RESEARCH WORK .....	26
SUMMARIES OF PAPERS.....	27
ACKNOWLEDGEMENTS.....	29
NOTATION – ACRONYMS AND SYMBOLS.....	30
REFERENCES .....	32