

Contents

ABSTRACT	4
SOUHRN	6
LIST OF PAPERS	7
THEORETICAL BACKGROUND	8
1. RHEOLOGY AND ELECTORRHEOLOGICAL PHENOMENON.....	8
1.1 STEADY SHEAR FLOW	8
1.2 DYNAMIC SHEAR FLOW	11
2. FACTORS INFLUENCING ER EFFECT	14
2.1 ELECTORRHEOLOGICAL SUSPENSIONS	14
2.1.1 <i>Liquid continuous phase</i>	14
2.1.2 <i>Dispersed phase</i>	14
2.1.3 <i>Surfactants, additives</i>	18
2.2 EXTERNAL PARAMETERS INFLUENCING THE ELECTORRHEOLOGICAL EFFECT.....	21
2.2.1 <i>Electric field strength</i>	21
2.2.2 <i>Frequency of electric field</i>	22
2.2.3 <i>Temperature</i>	22
3. ELECTORRHEOLOGICAL MECHANISM MODELS	23
THE AIMS OF THE DOCTORAL RESEARCH WORK	27
SUMMARIES OF PAPERS.....	28
ACKNOWLEDGEMENTS	30
NOTATION – ACRONYMS AND SYMBOLS	31
REFERENCES	33
CURRICULUM VITAE	38