

CONTENT

PREFACE	4
ABSTRACT	6
1. MAGNETIC POLYMERIC COMPOSITES FOR THE DESIGN OF RADIO-ABSORBERS	
1.1 Introduction.....	8
1.2 Hybrid magnetic composites with controllable electromagnetic properties.....	10
1.2.1 Magnetic properties of MnZn ferrite–polyaniline composites: Effect of interphase interaction	10
1.2.2 Electric conductivity and dielectric properties of MnZn ferrite–polyaniline composites: Effect of electrical conductivity of polyaniline	18
1.3 The efficiency of radio-absorbers based on hybrid magnetic composites.....	21
2. SILICONE-BASED MAGNETIC COMPOSITES FOR ARTERIAL EMBOLIZATION HYPERTHERMIA	23
2.1. Introduction.....	23
2.2. Synthesis of magnetic iron oxide nanoparticles.....	25
2.3. Development of silicone-based magnetic composites	31
2.3.1 Formation of embolic agents and composites.....	31
2.3.2 Heating efficiency of composites in alternating magnetic field	35
2.3.3 Radiopaque property of composites.....	36
2.3.4 Thermomechanical properties of composites	37
2.4. <i>In-vivo</i> and <i>in-vitro</i> study of composites efficacy for embolization and magnetic hyperthermia	38
CONCLUDING REMARKS	41
FUTURE RESEARCH.....	43
BIBLIOGRAPHY	44
ABBREVIATIONS AND SYMBOLS.....	52
Author’s professional CURRICULUM VITAE	55
LIST OF PUBLICATIONS by the author.....	57