

CONTENTS

CONTENTS.....	3
ABSTRACT	4
INTRODUCTION.....	4
OBJECTIVES	5
CURRENT STATE OF KNOWLEDGE	6
EXPERIMENT AND MEASUREMENT	8
Cavitation bubble dynamics.....	10
Shock wave propagation.....	11
Cavitation bubble collapse.....	12
PHYSICAL MODEL.....	12
Plasma growth modelling	13
Bubble dynamics	13
Shock wave propagation.....	14
RESULTS	15
Dynamics of the laser induced bubble	15
Numerical simulation of the pressure and velocity field	16
Energy dissipation induced by the outgoing shock wave	17
Energy distribution during the bubble growth and collapse.....	19
Numerical simulation of bubble collapse	19
SUMMARY AND CRITICAL EVALUATION	21
ACKNOWLEDGEMENTS	23
NOMENCLATURE	23
LITERATURE	24
AUTHOR'S PUBLICATIONS.....	25