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Ballistic Parameters Calculation and Closed Combustion Pressure Experiments

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Abstract: To determine the charge parameters of combustion pots in various conditions, VLW EOS method is used to calculate co-volume and impetus of ignition charges and explosive charges. The calculated results together with Nobel-Abel EOS, are used to predict charge parameters of combustion pots for attaining some maximum pressure output. Experiments with 1 cm^3 combustion pot indicate that the average maximum pressure output of combustion pots with 0.2 g B/KNO_3 (ignition charge) and 0.0995 g RDX (combustion charge) is 179 MPa, and that of combustion pots with 0.2 g B/KNO_3 and 0.199 g RDX is 348 MPa, respectively close to 192 MPa and 384 MPa which are design values by VLW EOS method.

Key words: explosion mechanics; VLW EOS; numerical simulation; RDX; B/KNO_3

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"中国力学学会学术大会 2005"——爆炸力学学术分会征文

中国力学学会将于 2005 年 8 月 26 ~ 28 日在北京举办"中国力学学会学术大会 2005(CCTM2005)"。大会将设 12 个分会场和多个 minisymposium,爆炸力学学术分会由北京理工大学负责。

　　一、学术交流内容

　　1. 含能材料起爆机理与爆轰理论;

　　2. 高速与超高速碰撞问题;

　　3. 动态载荷作用下材料的损伤、破坏和失效研究;

　　4. 材料与结构的动态响应行为;

　　5. 爆炸成型与加工;

　　6. 爆炸冲击效应与应用;

　　7. 爆炸与冲击动力学数值模拟理论与方法;

　　8. 爆炸与冲击动力学实验技术与方法。

　　二、稿件要求

　　论文必须是未公开发表的,语言为中文;提交 1 页以内 A4 纸的摘要(电子稿),具体格式参见《力学学报》;截稿日期为 2005 年 4 月 1 日,2005 年 5 月 1 日前发录用通知;录用论文(摘要)将由大会汇集成册,正式出版。

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