SHOCK05-2005-000382

Abstract for an Invited Paper
for the SHOCK05 Meeting of
the American Physical Society

Processing, application and characterization of ultrafine and nanometric materials in energetic compositions

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The energetic materials research at TNO Defence, Security and Safety, The Netherlands is focusing at the development and characterization of explosives (insensitive munitions), gun/rocket propellants and pyrotechnic compositions and their ingredients. The application of reactive, ultrafine and nanometric materials in these compositions has gained increased interest over the past few years. Current research topics focus on the processing, application and characterization of (1) ultrafine energetic crystals and composite nano-clusters in plastic bonded explosives, (2) metastable intermolecular composites (MICs) and (3) self-propagating high-temperature synthesis (SHS). In this paper several of these topics will be highlighted in more detail.