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ADVANCED ENERGETIC MATERIALS (EM)

NEW TRENDS IN ENERGETIC MATERIALS

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ABSTRACT

Energetic materials such as explosives, propellants and pyrotechnics are widely used for both civilian and military explosives applications. presentation focuses briefly on the synthesis aspects and some of the physico-chemical properties of energetic materials of the class: insensitive energetic materials, oxidizers, nitramines, nitrate esters , thermally stable explosives, and primary explosives. The over all aim of the high energy materials research community is to develop the more powerful energetic materials/explosive formulations/propellant formulations in comparison to currently known benchmark materials/compositions. The research program will enable molecularly manipulated energetic materials and formulations with tuned chemical and physical properties, high performance, low sensitivity, and multifunctionality (a single smart material that can function as a structural material, embedded sensor, and have real-time selectable propellant, explosive, or non-lethal functionality within a precision munition).

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