

**PLENARY 2****RECENT ADVANCES IN THE SYNTHESIS OF NEW ENERGETIC MATERIALS**

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Highly energetic combinations of fuel ions with oxidizing counterions are well known for oxygen based oxidizers. Typical examples are  $\text{NH}_4\text{ClO}_4$ ,  $\text{NH}_4\text{NO}_3$  or  $\text{N}(\text{CH}_3)_4\text{O}_3$ . However, combinations of fuel ions with strongly oxidizing, complex fluoro ions had previously been essentially unknown. The possibilities of combining strongly oxidizing fluoro ions, such as  $\text{ClF}_4^-$ ,  $\text{BrF}_4^-$  or  $\text{NF}_4^+$ , with fuel ions such as  $\text{NH}_4^+$ ,  $\text{N}(\text{CH}_3)_4^+$  or  $\text{BH}_4^-$  have been studied in our laboratory. In spite of many violent failures, several stable combinations were found and characterized.

A brief subjective analysis of major discoveries during the past decades will be given, and its implications for our ability to predict trends for the 21st century will be discussed.