

# Formable Reactive Material Composites



**MATSYS Inc.**  
Sterling, VA  
[www.matsys.com](http://www.matsys.com)



## Contact:

Pascal Dubé  
Director  
MATSYS Inc.  
[pdube@matsys.com](mailto:pdube@matsys.com)

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Formable metal composites, non-energetic electronic disabling solution, breaching technology

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## THE CHALLENGE

Reactive material composites are materials that do not detonate but are still capable of releasing large amounts of chemical energy through combustion or similar exothermic chemical reactions. In their traditional metal form, these materials are chemically and mechanically homogeneous with highly tailorable exotherms and/or combustion properties. However, the resulting composites are often quite brittle and cannot be re-shaped by common metal working/tooling methods. A formable class based on these material compositions would enable new applications from the ability to undergo plastic deformation without damage or fracture.

## THE INNOVATION

MATSYS has developed novel classes of metal composites offering complementary physical and reactive properties. These materials offer formability at temperatures ranging from sub-ambient to 100°C with demonstrated thermal stability above 200°C. These materials are shelf-stable and classified as inert from DOT hazard classifications. Our new reactive formulations are ideal for a range of applications ranging from crack repair, breaching, and incorporation into electronic systems.

## THE NAVY BENEFIT

Our technology provides the Navy with new tools and opportunities to introduce reactive material composites in previously inaccessible applications. These unique materials offer the ability to provide directional energy output with tailored physical properties, while the inherent stability of these formable composites allow for common usage and storage conditions.

## THE FUTURE

The effort currently focuses on the application of these new formable composites to military solutions. MATSYS is actively seeking investments to transition into Phase III to commercialize our solutions.