# Article information:

Catalysts | Free Full-Text | Acidic Stabilization of the Dual-Aromatic Heterocyclic Anions
<https://www.mdpi.com/2073-4344/11/7/766>

# Article summary:

1. Recently, dual-aromatic compounds such as the pentazole anion have been discovered to have distinct chemistry in comparison to traditional π-aromatics, such as benzene.

2. Quantum mechanical calculations of the electron density, atomistic structure, interatomic interactions, molecular orbital, magnetic shielding, and energetics were used to explore the stability and reactivity of three basic heterocycle anions.

3. It was found that when the acidic ions H3O+/NH4+ are three times more in number than the basic heterocyclic anions, the anions remain unprotonated and show a significant stabilization effect on the studied heterocyclic anions.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Acidic Stabilization of the Dual-Aromatic Heterocyclic Anions” is a well-written and comprehensive overview of recent research into nitrogen-rich high energy density materials (HEDMs). The authors provide a thorough explanation of their research methodology and results, which are supported by quantum mechanical calculations. The article is also unbiased in its presentation of both sides of the argument; it acknowledges potential risks associated with HEDMs while also highlighting their potential benefits for space exploration and other applications. Furthermore, all claims made in the article are backed up by evidence from experiments or simulations conducted by the authors themselves or other researchers in this field. In conclusion, this article is reliable and trustworthy due to its clear explanations and evidence-based approach.

# Topics for further research:

* High energy density materials applications
* Nitrogen-rich HEDMs
* Quantum mechanical calculations
* Dual-aromatic heterocyclic anions
* Acidic stabilization of HEDMs
* Space exploration and HEDMs

# Report location:

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