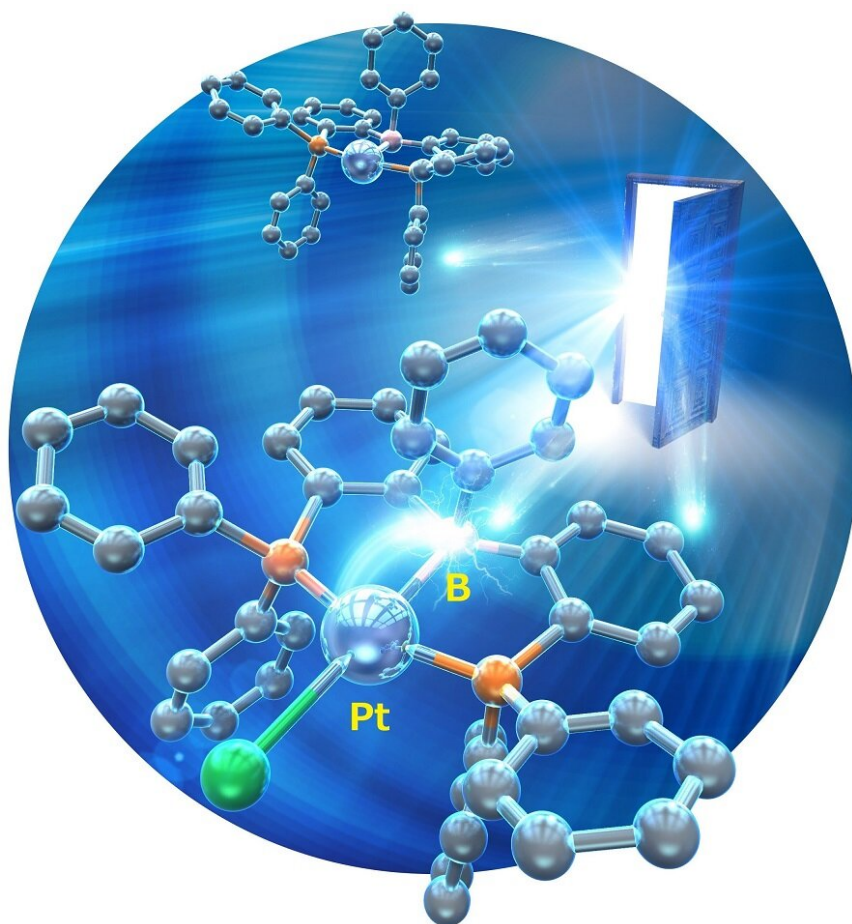


# First structural analysis of highly reactive anionic platinum complexes

May 10 2023

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Extremely unstable anionic  $\text{Pt}^0$  complexes have been successfully stabilized by leveraging the electron-accepting ability of boron compounds. Credit: Hajime Kameo, OMU

Anionic  $M^0$  complexes ( $M$  = group 10 metals) have attracted attention as active species for catalytic reactions; however, their molecular structures have very rarely been determined due to their extremely high reactivity. Particularly, the structures of  $Pt^0$  complexes, which are expected to exhibit a high degree of reactivity, have not been determined, and their syntheses have been almost nonexistent.

Associate Professor Hajime Kameo, and Professor Hiroyuki Matsuzaka from the Osaka Metropolitan University Graduate School of Science and CNRS Senior Researcher Didier Bourissou (Paul Sabatier University—Toulouse III) elucidated the [molecular structures](#) of anionic  $Pt^0$  complexes for the first time. Their findings were published in *Angewandte Chemie International Edition*.

The key to success is the stabilization of anionic  $Pt^0$  complexes (which are usually unstable due to their electron-donating nature) by the electron-accepting properties of boron compounds.

"Although platinum complexes that exhibit a variety of catalytic activities have been actively studied, anionic  $Pt^0$  complexes have remained a mystery," stated Professor Kameo. "The results of this research not only enable us to elucidate the properties and functions of highly active chemical species but also provide new guidelines for their creation. It is expected to lead to the development of innovative [catalytic reactions](#) mediated by these [chemical species](#)."

**More information:** Hajime Kameo et al, Square-Planar Anionic  $Pt^0$  Complexes, *Angewandte Chemie International Edition* (2023). [DOI: 10.1002/anie.202301509](https://doi.org/10.1002/anie.202301509)

Provided by Osaka Metropolitan University

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