



Showcasing research from Professor Fabian Dielmann's laboratory, Institute for General, Inorganic and Theoretical Chemistry, University of Innsbruck, Tyrol, Austria.

Phosphonium fullerides: isolable zwitterionic adducts of a phosphine with  $C_{60}$

Phosphines charge up fullerene molecules by forming zwitterionic Lewis adducts! While modifying carbon allotropes is crucial for high-tech materials, one of the simplest functionalizations – forming Lewis adducts with phosphines – has remained elusive. This study shows that the highly basic phosphine  $(tmg)_3P$  reacts with  $C_{60}$  to form isolable phosphonium fullerides with up to two phosphines attached. The resulting increase in negative charge on the fullerene core enables further electrophilic functionalization, unlocking new possibilities for advanced material applications.

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