



Showcasing research from Professor Alvarez's laboratory,  
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Creating covalent bonds between Cu and C at the interface  
of metal/open-ended carbon nanotubes

Vertically aligned carbon nanotubes (CNTs) are anchored to copper metal substrates *via* chemical bonding. Robust bonding is formed through connecting carbon (C) atoms on organic linker molecules with copper (Cu) atoms. Theoretical calculations reveal that C atom on each linker establishes a bridge like covalent bonds with two adjacent Cu atoms on (100) and (110) substrates, while forming a weaker linear bond on the (111) substrate. Experimental validation involves immersing CNTs bonded to copper in a solution and subjecting to sonication to showcase the robustness of the bonding.

As featured in:



See Jorge M. Seminario,  
Noe T. Alvarez *et al.*,  
*Nanoscale Adv.*, 2024, **6**, 428.