



OPEN

Author Correction: Exploring room temperature spin transport under band gap opening in bilayer graphene

Published online: 11 September 2023

Christopher R. Anderson , Noel Natera-Cordero , Victor H. Guarochico-Moreira , Irina V. Grigorieva  & Ivan J. Vera-Marun 

Correction to: *Scientific Reports* <https://doi.org/10.1038/s41598-023-36800-2>, published online 26 June 2023

The original version of this Article contained an error in Figure 1 and 2. In Figure 1 the revised figure was not used in the article and in Figure 2b there was a typo in the y axis legend where “ $n \times 10^{-12} (\text{cm}^{-2})$ ” was changed to “ $n \times 10^{12} (\text{cm}^{-2})$ ”.

The original Figures 1 and 2 accompanying legends appear below.

In addition, in the Results section, under the subheading ‘Spin transport measurements’,

“These are measurements where we sweep an in-plane magnetic field, which reverses the magnetisation of the 1D contacts and enables us to obtain either a parallel or antiparallel magnetic alignment between the injector and detector contacts.”

now reads

“These are measurements where we sweep an in-plane magnetic field, B_{\parallel} , applied along the direction of contacts, which reverses the magnetisation of the 1D contacts and enables us to obtain either a parallel or antiparallel magnetic alignment between the injector and detector contacts.”

Also,

“In doing so, we sweep a perpendicular magnetic field strength across a range of ± 200 mT, which causes the diffusing electronic spins to experience Larmor precession, and fit the spin signal with the Hanle equation²².”

now reads

“In doing so, we sweep magnetic field strength perpendicular to the plane of the graphene (see Figure 1b), B_{\perp} , across a range of ± 200 mT, which causes the diffusing electronic spins to experience Larmor precession, and fit the spin signal with the Hanle equation²².”

The original Article has been corrected.

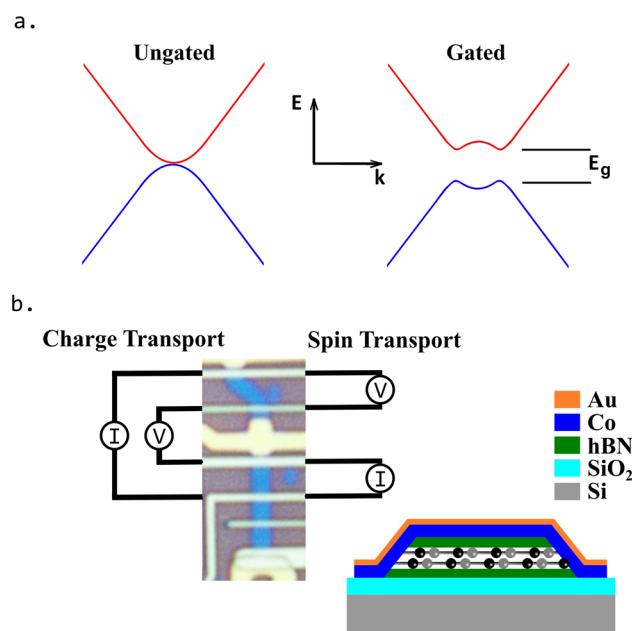


Figure 1. Bilayer graphene transport channel and device. (a) Band structure of pristine BLG without (left) and with (right) an applied perpendicular electric displacement field. (b) Optical micrograph of our $\sim 1 \mu\text{m}$ wide BLG graphene transport channels (blue) with contacts and top gate (in the measurement region). The charge (spin) transport current injection, I , and local (non-local) potential difference, V , measurement configuration. Inset: Schematic of the device heterostructure showing the Co/Au 1D edge contacts, with the graphene represented by the balls and sticks.

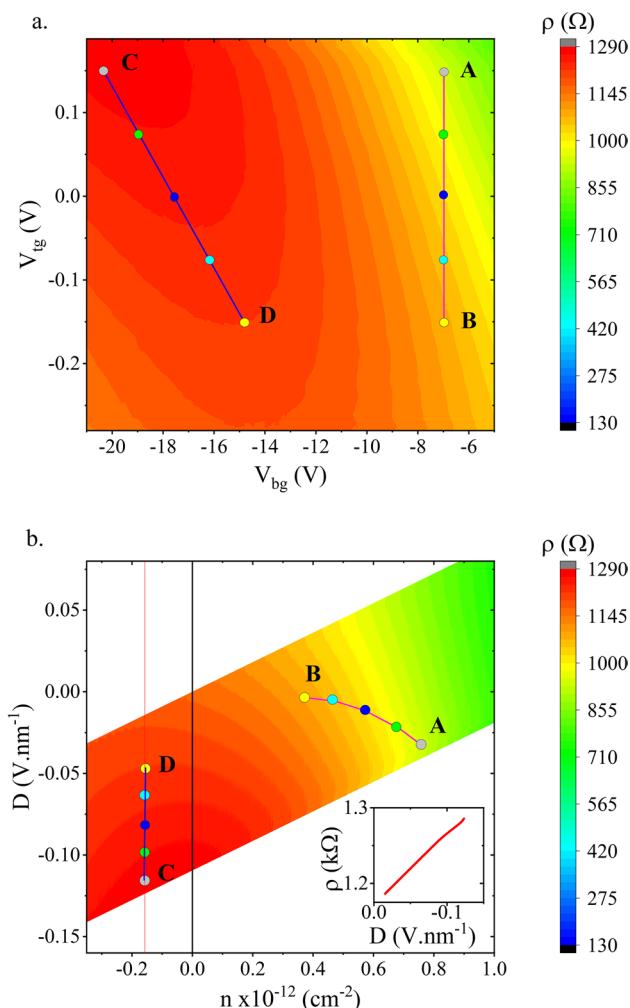


Figure 2. (a) A 2D charge transport measurement map at RT showing the effect on the sheet resistance, ρ , of applying a back gate voltage, V_{bg} , and top gate voltage, V_{tg} . (b) The same charge transport measurements transformed into a map as a function of carrier density, n , and electric displacement field, D . In both maps the symbols are shown where the spin transport measurements were made. b(inset) Sheet resistance close and parallel to the Dirac ridge ($n \approx 0$).



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2023