

Supplementary information: Coherent quantum transport features in carbon superlattice structures

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ABSTRACT

Supplementary information on the high field transport properties of DLC superlattices, additional calculations of the I-V characteristics which illustrate that the barrier height has a far more drastic effect on resonant transmission than the well width and an additional TEM image of a DLC quantum well structure.

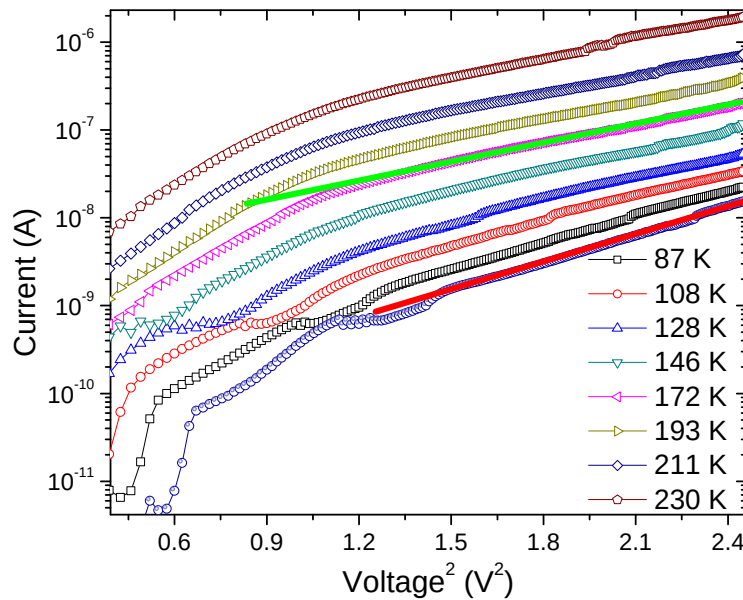


Figure 1. Current as a function of the square root of voltage for a DLC superlattice with 4 barriers of 8 nm and 3 wells of width 2 nm. The red and green lines are linear guides to the eye.

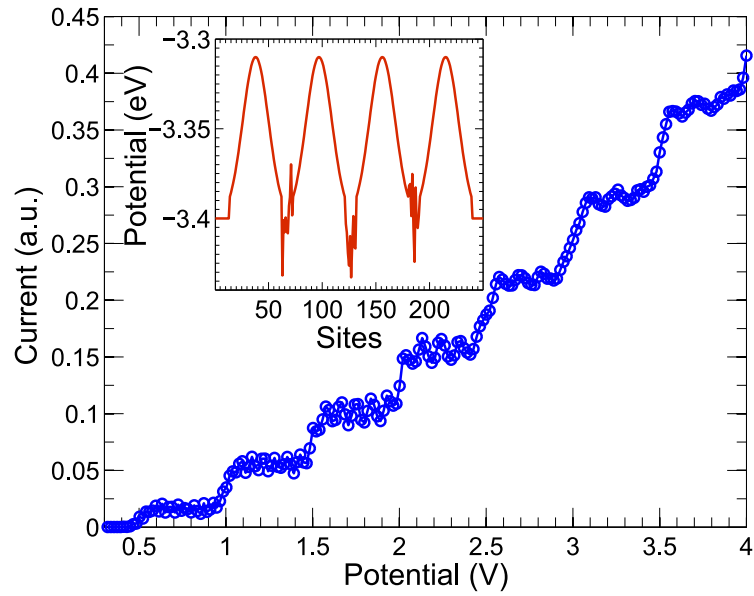


Figure 2. Calculated current-voltage characteristics of a DLC superlattice with 4 barriers of 7 nm and 3 wells of 1 nm assuming a Gaussian distribution of around a mean hopping parameter in the sp^3 - C regions.

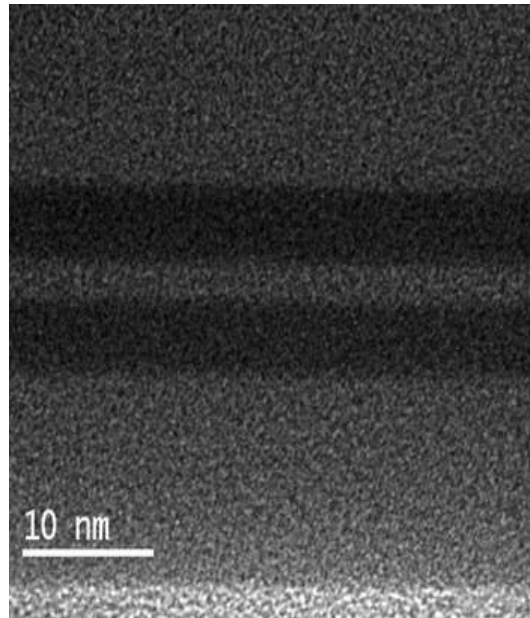


Figure 3. TEM image of a DLC quantum well structure with barriers of width 6 nm and a wells width of 3 nm.