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Correction

Correction: Shahbazi et al. Effective Low-Energy Hamiltonians and Unconventional Landau-Level Spectrum of Monolayer C_3N. *Nanomaterials* 2022, *12*, 4375

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In our published paper [1], we have identified misprints and errors in the values of the $\mathbf{k}\cdot\mathbf{p}$ model parameters, which were obtained by fitting the results of the density function theory (DFT) band structure calculations.

1. Effective Mass Values in Table 1

The corrected effective masses in Table 1 are as follows:

Table 1. Effective masses at the Γ and M points.

	All Directions	M–Γ Line	M–K Line
m_{vb}^{Γ}/m_e	0.07	-	-
m_{cb}^{Γ}/m_e	0.22	-	-
m_{cb+1}^{Γ}/m_e	0.08	-	-
m_{vb}^{M}/m_e	-	-0.25	-0.03
m_{cb}^{M}/m_e	-	-0.19	0.03

2. Corrected $\mathbf{k}\cdot\mathbf{p}$ Model Parameters

The effective mass errors propagated to the derived $\mathbf{k}\cdot\mathbf{p}$ model parameters. The corrected parameters, which appear in $H^{\Gamma}_{\mathbf{k}\cdot\mathbf{p}}$ and $H^{M}_{\mathbf{k}\cdot\mathbf{p}}$ in Equation (3) and Equation (6), respectively, are as follows:

$$\alpha_1 = 51.18, \quad \alpha_2 = 17.68, \quad \alpha_3 = 13.89$$
$$\beta_1 = -111.7, \quad \beta_2 = -0.71, \quad \beta_3 = 125.3$$
$$\gamma_{21} = 5.61.$$

The parameters α_1, α_2, α_3, β_1, β_2, and β_3 are in units of eVÅ^2, and γ_{21} is in units of eVÅ.

3. Corrections to Landau-Level Plots (Figures 4 and 5)

As a result of the correction to the values of α_2 and α_3, the Landau-level plots shown in Figures 4 and 5 have slightly changed compared to those originally published (see

Figures 4 and 5). The conclusions with regards to the properties of the Landau-level spectrum are not affected.

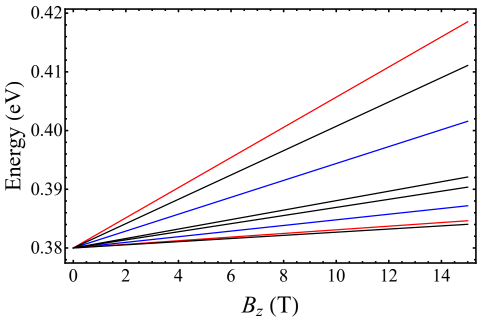

Figure 4. Landau levels in the CB at the Γ point of the BZ as a function of the out-of-plane magnetic field B_z. Blue lines show E_0^Γ and E_1^Γ , given below in Equation (15), and red lines indicate the first two LLs that can be obtained from the Ansatz in Equation (16). Black lines show the "conventional" LLs. See the manuscript.

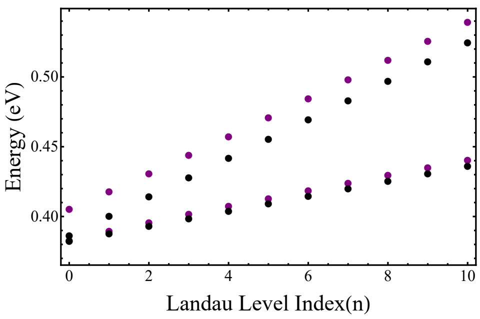

Figure 5. Landau levels in the CB at the Γ point of the BZ as a function of the LL index n for $B_z = 10$ T. Magenta dots indicate LLs that can be obtained from the Ansatz in Equation (16) of the manuscript, and black dots show the "conventional" LLs. See the manuscript.

4. Corrections to Wigner–Seitz Radius Mentioned in Section 5.1

The change in the effective masses affects the dimensionless Wigner–Seitz radius r_s. This is important because we used r_s to assess the possible relevance of the electron–electron interactions on the Landau level spectrum. The effective mass values for the conduction bands CB and CB+1 given in the original manuscript were significantly heavier than the corrected values shown in Table 1. Therefore, one may expect that the electron–electron interactions are less important than originally anticipated because of the larger kinetic energy (smaller effective mass) of the charge carriers.

The Wigner–Seitz radius is given by $r_s = 1/(\sqrt{\pi n_e} a_B^*)$, where n_e is the electron density, $a_B^* = a_B(\kappa m_e/m^*)$ is the effective Bohr radius, m^* is the effective mass, κ is the dielectric constant, and a_B is the Bohr radius. Taking $\kappa = 5$ and an electron density of $n = 4 \cdot 10^{12}\,\mathrm{cm}^{-2}$, one finds $r_s = 2.35$ for the heavier conduction band, where $m^*/m_e = 0.22$.

5. Corrections to Appendix A

There was a typo in Equation (A2), which shows one of the partners of the wave function that transform according to the E_{1g} irreducible representation of the point group D_{6h}. The correct form of wave function ϕ_4 reads as follows:

$$\phi_4 = \frac{1}{\sqrt{6}}\left[p_Z^{1,C} + \Omega^5 p_z^{2,C} + \Omega^4 p_z^{3,C} - p_z^{4,C} + \Omega^2 p_z^{5,C} + \Omega p_z^{6,C}\right].$$

Reference

1. Shahbazi, M.; Davoodi, J.; Boochani, A.; Khanjani, H.; Kormányos, A. Effective Low-Energy Hamiltonians and Unconventional Landau-Level Spectrum of Monolayer C_3N. *Nanomaterials* **2022**, *12*, 4375. [CrossRef] [PubMed]