Retraction Note: Living annulative π -extension polymerization for graphene nanoribbon synthesis

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We would like to retract this Letter. *Nature* previously issued an Editorial Expression of Concern (<https://doi.org/10.1038/s41586-020-2756-0>) after we, the authors, alerted the journal to potential problems with the matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) mass spectrometry data. These issues undermine our confidence in the integrity of the study as a whole and we therefore now wish to retract the Letter. Our group continues to explore the synthesis of graphene nanoribbons (GNRs), but we have been unable to reproduce some of the results presented in this Letter. Careful scrutiny of the source data has identified potential problems with the manner in which the MALDI-TOF mass spectrometry data in this Letter were originally generated and processed. Specifically, the exact molecular weights (m/z calculated for $[M]^+$ and $[M + Ag]^+$) of GNRs **2** (Extended Data Fig. 1), **7** (Extended Data Fig. 6) and **8** (Extended Data Fig. 7) were calculated wrongly on the basis of the assumption that all carbon atoms in these GNRs were ^{12}C (monoisotopic). In all GNRs, the exact mass peaks should appear approximately 6 to 9 mass units higher. Thus, the observed mass spectra do not match the proposed GNR structures. The isotopic patterns of some GNRs (for example, Extended Data Fig. 7c, d for GNR **8**) do not match the (correct) calculated spectra. These also do not support the formation of the proposed GNR structures. The baselines (noise) of the mass spectra of GNRs **2** and **8** appear to be identical, which calls into question the integrity of the mass data. The original MALDI-TOF mass spectrometry data are unavailable and only editable secondary data exist, which also raises concerns regarding the integrity of the mass data. We regret any confusion and apologize to the scientific community.