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Engineered Soliton in Bilayer Graphene from Chemical Vapor Deposition ZHENG TANG LUO, QICHENG ZHANG, ZHAOLI GAO, Hong Kong Univ of Sci & Tech — Strain engineering is an effective methodology to study the recently reported topologically protected edge states of bilayer graphene. In this work, we demonstrate that we are able to produce high yield of Bernal-stacked graphene bilayers by tuning the composition of the growth substrates. The high-yield scalable CVD fabrication process of bilayer graphene allows us to investigate the protected edge states with a variety of characterization tools. For example, large strain at strain solitons allows them to be visible in by Raman scattering, where the strain direction difference leads to diversified polarization Raman response. The distribution of strain solitons can be tuned by adjusting the growth condition and post-growth treatment, which allows us to observe the topologically protected edge states with assistance from and electron transport measurements.

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