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Abstract for an Invited Paper
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Physics and applications of novel structures with CVD graphene: edges, grain boundaries, twisted bilayers, and hybrids

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In this talk, I will discuss experimental studies (including electronic transport, optical/Raman, and STM) of physical properties of various novel synthetic graphene structures formed in CVD graphene grown on Cu, including edges of graphene single crystals, grain boundaries between such single crystals, and twisted bilayer graphene. Such synthetic graphene structures could be used as playground to explore novel physics and engineer new functionalities in graphene based electronic devices. Furthermore, I will discuss graphene based “hybrid” materials combining CVD graphene with semiconductor and metallic nanostructures for potential optoelectronic and plasmonics applications.