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Electronic Structure Study of Edge Saturated Graphene Nanoribbons YIMING ZHANG, PHILIP SHEMELLA, Renssleaer Polytechnic Institute, P.M. AJAYAN, Rice University, SAROJ NAYAK, Renssleaer Polytechnic Institute, RENSSLEAER POLYTECHNIC INSTITUTE TEAM — Using density functional theory and GW method, we have studied how the electronic structures of graphene nanoribbons responds to the edge saturation. The energy gaps and effective mass of the nanoribbons are highly sensitive to the edge states, as well as the nanoribbon width. This suggests a new approach to modify the electronic structure of graphene nanoribbons by tweaking the edge saturation.

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