Biomolecular interactions of emerging two-dimensional materials with aromatic amino acids. SAI SUNIL KUMAR MALLINENI\textsuperscript{1}, MEHMET KARAKAYA\textsuperscript{2}, RAMAKRISHNA PODILA\textsuperscript{3}, APPARAO RAO\textsuperscript{4}, None — The present work experimentally investigates the interaction of aromatic amino acids, viz., tyrosine, tryptophan, and phenylalanine with novel two-dimensional (2D) materials including graphene (G), graphene oxide (GO), and boron nitride (BN). Photoluminescence, micro-Raman spectroscopy and cyclic voltammetry were employed to investigate the nature of interactions and possible charge transfer between 2D materials and amino acids. Consistent with previous theoretical studies\textsuperscript{[1,2]}, graphene and BN were observed to interact with amino acids through $\pi-\pi$ interactions. Furthermore, we found that GO exhibits strong interactions with tryptophan and tyrosine as compared to graphene and BN, which we attribute to the formation of H-bonds between tryptophan and GO as shown theoretically in Ref. 2. On the other hand, phenylalanine did not exhibit much difference in interactions with G, GO, and BN.\textsuperscript{(1)} The Journal of Chemical Physics 130, 124911 (2009) \textsuperscript{(2)} J. Phys. Chem. Lett. 2013, 4, 3710–3718

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