

BIO: Zak Al Balushi is an assistant professor in the department of Materials Science and Engineering at University of California, Berkeley and a faculty scientist in the Materials Science Division at the Lawrence Berkeley National Laboratory. Zakaria received his B.S. (2011), M.S. (2012) in Engineering Science and his Ph.D. (2017) in Materials Science and Engineering all from The Pennsylvania State University. His early work focused on integration and fabrication of silicon nanowire devices, then on the growth of group-III nitride semiconductors, *in situ* metrology during MOCVD growth, epitaxial graphene and the discovery and characterization of unconventional low-dimensional materials and heterostructures. Prior to his appointment at the University of California, Berkeley, he held two postdoctoral fellowships: the Resnick Prize Fellowship in Applied Physics and Materials Science and the NSF Alliances for Graduate Education and the Professoriate (AGEP) Fellowship both at the California Institute of Technology under the supervision of Professor Harry Atwater. At Caltech, he focused on the synthesis and characterization of phase transformations in transition metal dichalcogenides 2D materials. At the University of California, Berkeley, his research group continues to expand in this area and beyond, creating new synthesis and