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Could pnictide-type superconductivity occur in FeAs/GaAs superlattices? SINEAD GRIFFIN, NICOLA SPALDIN, U.C. Santa Barbara — A recurring feature in the iron pnictide superconductors is the existence of an FeAs layer. Here we use first-principles density functional calculations to examine whether the electronic structure characteristics believed to correlate with superconductivity in the pnictides are reproduced in superlattices containing alternating zincblende structure FeAs/GaAs layers. Such superlattices could offer important advantages in ease of fabrication using MBE techniques and integration with semiconductor devices.

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