In article number 1907359, Saad A. Khan and co-workers present a sustainable approach to produce ultralight aerogels from sol–gel electrospun nanofibers of silica and cellulose diacetate through a simple approach involving no chemical cross-linker and minimum use of solvents. The mechanical robustness and flexibility, high affinity for oils, and flame retardant nature of these aerogels make them promising candidates for a variety of applications.