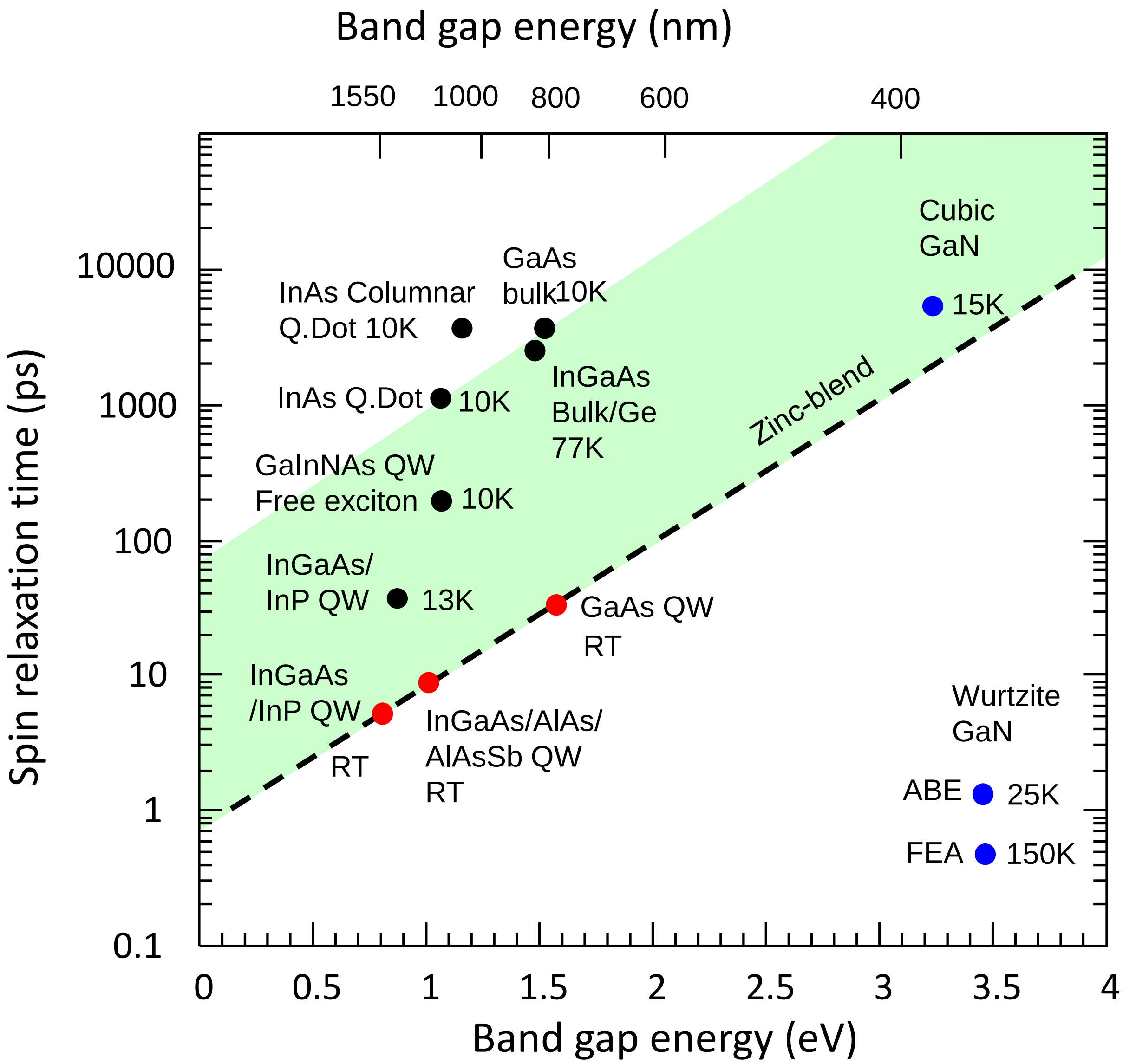
Spin relaxation time vs Bandgap energy



InGaAs bulk/Ge substrate

APL 100, 252414 (2012)

InGaAs/AlAsSb QW

APL 100, 092401 (2012)

GaInNAs/GaAs QW

APL 92, (2008) 051908

InAs Q.Dot & GaAs bulk

APL 84 (2004) 3576

InGaAs/InP QW

APL 70, 1131 (1997)

APL 85, 2083 (2004)

GaAs/AlGaAs QW

APL 56, 2213 (1990)

APL 68, 797 (1996)

Wurtzite GaN

FEA: APL 85, 3116 (2004)

ABE: APL 89, 182110 (2006)

Cubic GaN

APL 88, 162114 (2006)

In the zinc-blend structure spin relaxation time becomes shorter for narrower band-gap semiconductors. It is because the spin-orbit interaction which is the origin of D’yakonov-Perel process becomes larger for the narrower band gap semiconductors.

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