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Enrichment and growth of enriched ^{28}Si films JOSHUA POMEROY, KEVIN DWYER, National Institute of Standards and Technology — In support of quantum information and spintronics efforts, we are producing enriched ^{28}Si films that are 99.9% ^{28}Si according to secondary ion mass spectrometry assessment. We use an ionization source to crack and ionize natural abundance silane gas, then extract the ions through a magnetic sector analyzer to isolate the major isotope ^{28}Si. We have presently demonstrated $>$ 100 nm thick films of silicon and carbon, which was enriched to 99.996% ^{12}C. With ongoing improvements, we expect to produce ^{28}Si enriched to better than 99.99% at thicknesses $>$ 1 μm grown epitaxially on Si(100) substrates.

Joshua Pomeroy
National Institute of Standards and Technology

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