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HP-Ge Crystal Growth at USD

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Detector grade High-Purity Germanium (HP-Ge) crystals are largely needed for rare event physics. At the University of South Dakota (USD), we have successfully built a product chain that can purify the commercially available germanium raw materials to detector-grade HP-Ge crystals and fabricated them into Ge detectors. High-purity germanium crystals with diameters up to 12 cm were grown by the Czochralski method. We have been trying to increase the mass of input materials and grow the germanium crystals under a higher chamber pressure to enhance the chance to have a detector-grade region from the grown crystal. A summary of our current achievement and inventory of detector grade crystals will be reported.

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