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Improving Thick Germanium Detectors: Cryogenic Dark Matter Search[1] PAULETTE EPSTEIN[2], Cyclotron Institute, Texas A&M University, RUPAK MAHAPATRA, Texas A&M University, CDMS AT TEXAS A&M UNIVERSITY TEAM — Texas A&M University is working on improving the current production rate, quality, and reproducibility of fabricated detectors, specifically for the Cryogenic Dark Matter Search (CDMS) to detect particles called WIMPs (Weakly Interacting Massive Particles). An automated sputtering system is used to deposit amorphous silicon and high quality tungsten and aluminum thin-films on 3 inch by 1 inch germanium substrates to demonstrate repeatable depositions with desired properties, such as, accurate thickness, desirable critical temperature, and good sensitivity at low energy. These techniques can then be used in the future to improve detectors, not only for the search for Dark Matter, but for other areas of research in nuclear and particle physics.

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