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Development of low-cost cryogenic temperature measurement system using Arduino microcontroller.[1] WOONG SUNG LEE, None — The implementation of a cryogenic temperature measurement system is an expensive procedure for an instructional laboratory. We present a simple, low-cost, and computer-controlled cryogenic temperature measurement system to replace highly-developed commercial solutions. An Arduino microcontroller measures the voltage across a silicon diode which is connected to a constant current source circuit. Then, a program inside the microcontroller calculates the temperature. Additionally, we present a graphical user interface based on the open-source processing language. Our performance test shows that the system works at a reasonable accuracy from 297.15 K (typical room temperature) down to 77 K (liquid nitrogen temperature).

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None

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