

# Nuclear Fusion Using a Pyroelectric Crystal Particle Accelerator

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A particle accelerator was constructed using a pair of lithium niobate pyroelectric crystals as a power source. The crystals were arranged in a push-pull configuration to double the potential voltage. Heating and cooling the crystals generated a high voltage field which ionized the low pressure deuterium gas and the resulting deuterons were accelerated to the oppositely charge crystal. Focused electron beams, 30 keV Bremsstrahlung x-rays and fluorescent x-rays were observed. Ion beam current was estimated by using a Faraday cup and a novel ammeter consisting of a neon bulb and capacitor. Additionally, deuterons were accelerated into a deuterated lithium hydroxide target and a modest increase of neutrons indicated that deuterium-deuterium fusion was detected.

## Awards Won:

European Organization for Nuclear Research-CERN: All expense paid trip to tour CERN