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STUDY OF THE TECHNIQUE OF GAMMA-GAMMA COINCIDENCE COUNTING

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บทคัดย่อ

ระบบนับรังสีแกมมา-แกมมาโคอินซิเดนซ์ได้ประกอบขึ้นโดยใช้หัววัดรังสีแกมมาแบบ NaI(Tl) และทศลองวัดความแรงสัมบูรณ์ของต้นกำเนิดมาตรฐาน Co-60 และต้นกำเนิด Mn-56 ซึ่งผลิตได้จากการนำแมงกานีสไดออกไซด์ไปอบนิวตรอนจากต้นกำเนิดนิวตรอนแบบ Pu-239/Be ขนาด 5Ci ความแรงสัมบูรณ์ของต้นกำเนิดมาตรฐาน Co-60 ที่คำนวณได้จากการนับแบบโคอินซิเดนซ์ได้ผลคล่องจองกับความแรงสัมบูรณ์ที่คำนวณได้จากความแรงที่ระบุมาโดยผู้ผลิต การทดลองได้รวมถึงผลซึ่งเกิดจากการจัดหัววัดรังสีแบบต่างๆ จากความแรงสัมบูรณ์ของ Mn-56 ได้นำมาคำนวณหาเทอร์มินัลนิวตรอนฟลักซ์ ณ ตำแหน่งที่นำแมงกานีสไดออกไซด์ไปอบนิวตรอน

Thesis Title Study of the Technique of Gamma-Gamma
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ABSTRACT

A simple gamma-gamma coincidence counting system had been set up using two NaI(Tl) as gamma rays detectors and was operated to measure the absolute activities of standard Co-60 source and Mn-56 produced by irradiation of manganese dioxide with ⁵Cr Pu-238/Be neutron source. The absolute activities of Co-60 sources measured by coincidence counting technique are in good agreement with those calculated from the labeled activities. The experiment also was performed to study the effects of detector geometry arrangements. Thermal neutron flux at the position of irradiation of manganese dioxide was calculated from the absolute activities of Mn-56.



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