

Application of PIXE in the determination of the production cross section of a radionuclide decaying by electron capture

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Proton induced X-ray emission (PIXE) has been applied to the measurement of the production cross section of a radionuclide decaying by electron capture. By performing a PIXE type experiment on the daughter nuclide important advantages are obtained. The determination of some factors with usually large uncertainties, like solid angle and detector efficiency were avoided. The method was applied to the determination of cross section of the reaction $^{63}\text{Cu}(d,p)^{64}\text{Cu}$ at 2.4 MeV for ^{64}Cu production. This result is in full agreement with that obtained through the decay of the 1346keV gamma ray of ^{64}Cu . © 2004 Elsevier B.V. All rights reserved.