

# DISCOVERY OF LIGHT EMISSION FROM XRF SOURCES

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## ABSTRACT

Fluorescent light has been detected recently along with Rb, Ba, Tb, Cu, Mo, or Ag X-rays during  $\gamma$ - excitation of Rubidium sulphate, Barium oxide, or Terbium peroxide salt, and Cu, Mo, or Ag metal notably at room temperature (Variable Energy X-ray source, AMC 2084, UK). This insight led to the discovery of a new atomic phenomenon that occurs in X-ray and radioisotope sources.

## INTRODUCTION

Ever since the discovery of bremsstrahlung by W.C. Roentgen or characteristic X-rays of elements by C.G. Barkla, light emission was not known from X-ray sources. The current study disclosed that light photons follow the emission of X-rays,  $\gamma$ -rays, and  $\beta$ -particles from one and the same excited atom in the case of both X-ray and radioisotope sources, which is a significant finding in atomic sciences. This explains the fluorescent light emission detected from opaque salts, and metals notably at room temperature when present as X-ray and radioisotope sources. Moreover, electromagnetic radiation at eV level with energies in between that of X-rays and UV radiation also is expected.

## A NEW ATOMIC PHENOMENON (PADMANABHA RAO EFFECT)

(1) X-rays,  $\gamma$ -rays and  $\beta$ -particles lose energy while passing through charged space around orbital electron. The loss of energy reappears as electromagnetic radiation (Bharat radiation) in eV level with energies in between that of X-rays and UV-radiation. (ii) It excites valence electron and causes fluorescent light emission. This happens in both X-ray sources and radioisotopes (whether predominantly  $\gamma$  or  $\beta$ -emitters) though the sources are present as opaque salts or metals.

## REFERENCES

- [1] M.A. Padmanabha Rao. X-ray source emits not only X-rays but also low energy electromagnetic radiation, Presented at 1998 Symposium on Radiation Measurements and Applications, The University of Michigan, Ann Arbor, 1998 (abstract: 3PW26). [http:// www.geocities.com/ResearchTriangle/System/9908](http://www.geocities.com/ResearchTriangle/System/9908).

