



At Astatine

By -

Springer. Paperback. Book Condition: New. Paperback. 292 pages. Dimensions: 9.6in. x 6.7in. x 0.7in. Astatine is - besides radon and francium - the only natural radioelement which only has short-lived isotopes, thereby excluding experiments with weighable amounts of the element. This implies that all available data on physics and chemistry of this element are based on experiments on the tracer scale with 10^{-10} to 10^{-16} g - and this will also not change in future because no longer-lived isotopes as yet known are to be expected. Due to the fact that the only isotope of At occurring in the natural decay series, ^{219}At , results from the 0.005 α -branching of ^{223}Fr which itself is produced by the only 1.38 α -branching of ^{227}Ac - a member of the ^{235}U series - there is no chance to recover substantial amounts of ^{219}At from natural sources for scientific research of At. All studies, therefore, are being done with the isotopes ^{209}At to ^{211}At having half-lives in the few hours region and being obtained by irradiation of bismuth with α -particles via (α, xn) reactions or by proton irradiation of heavy elements via spallation reactions. The mostly used isotope is...



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