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[\[PDF \(888K\)\]](#) [\[References\]](#)**Determination of Rare Earth Elements (REEs) in Airborne Particulate Matter (APM) Collected in Tokyo, Japan, and a Positive Anomaly of Europium and Terbium**[Yoshinari SUZUKI](#)¹⁾, [Tatsunosuke SUZUKI](#)¹⁾ and [Naoki FURUTA](#)¹⁾*1) Department of Applied Chemistry, Faculty of Science and Engineering, Chuo University***(Received June 18, 2010)****(Accepted July 28, 2010)**

The determination of rare earth elements (REEs) in airborne particulate matter (APM) was conducted, and the distribution pattern of atmospheric REEs was evaluated in this study. The APM was collected in the center of Tokyo, Japan, where serious air pollution is always of concern. A cellulose acetate membrane filter was used to collect the APM because Ba and REEs contamination is lower than that in a quartz glass fiber filter. The REEs measurement was conducted by ICP-MS after the digestion of the APM by a microwave acid digestion procedure. The standard reference material (SRM) of NIST 1648 urban particulate matter was used to validate the accuracy of the analytical method. The analytical results for SRM well agreed with those of the reference and reported values. Consequently, the analytical method established in this study was applied to the determination of REEs in APM collected in Tokyo, Japan. The obtained REEs distribution pattern in the APM showed a positive anomaly of Tb and Eu. The La/Sm ratio, which is considered to be as a good indicator of the anthropogenic effect, in size-classified APM showed a high degree of the anthropogenic effect in fine APM with a diameter of <1.1 μm . Emission sources of Tb, Eu and other REEs are discussed.

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