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[\[PDF \(813K\)\]](#) [\[References\]](#)**Application of a Dynamic Reaction Cell (DRC) ICP-MS in Chromium and Iron Determinations in Rock, Soil and Terrestrial Water Samples**[Yasumasa OGAWA](#)¹⁾, [Shin-ichi YAMASAKI](#)¹⁾ and [Noriyoshi TSUCHIYA](#)¹⁾*1) Graduate School of Environmental Studies, Tohoku University***(Received March 18, 2010)****(Accepted June 18, 2010)**

Despite environmental and geochemical interests, Cr and Fe have been left beyond the reach of determinations by ICP-MS due to severe interferences originating from Ar. The applicability of a dynamic reaction cell (DRC)-ICP-MS has been examined for determinations in environmental and geochemical samples. The reaction with NH₃ in the DRC system provides an eligible technique to determine Cr, because of a greater improvement in the signal/noise (*S/N*) ratio due to an effective elimination of interferences arising from Ar (ArC, ArN and ArO), and makes it possible to analyze Cr even at sub- $\mu\text{g L}^{-1}$ levels. As compared to non-DRC mode analyses, the DRC technique using *m/z* 56 appeared to be preferable for Fe determination in most terrestrial waters because of effective suppression of ⁴⁰Ar¹⁶O⁺. In addition, the effects of cluster ions, such as ³⁹K¹⁴N¹H₃⁺ and ⁴⁰Ca¹⁴N¹H₂⁺, on Fe determination were also negligibly small.

Measurements using ⁵⁴Fe by the DRC mode are also advantageous for Ca-rich samples, such as limestone and dolomite.

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