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**BUTSURI-TANSA(Geophysical Exploration)**

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[\[PDF \(1226K\)\]](#) [\[References\]](#)**IP measurements on tunnel walls of a sericite deposit  
—A contact method of nonpolarizable electrodes on a base rock and  
detection of clay minerals by normalized chargeability—**Shinichi Takakura<sup>1)</sup> and Koji Nakada<sup>2)</sup>

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**ABSTRACT** The development of the IP (induced polarization) measurement technique used inside a tunnel is required in order to estimate the subsurface resistivity and chargeability structures with high precision. One of the largest problems in an IP measurement inside a tunnel is how nonpolarizable electrodes for potential measurements are fixed on a hard base rock of the tunnel wall. This problem is conquered by pasting up the nonpolarizable electrodes on the base rock with the plaster which is mixed with the same salts used for the electrodes. By using this contact method of nonpolarizable electrodes, highly precise two-dimensional IP measurements were carried out on tunnel walls of a sericite deposit. Sericite veins and hydrothermally altered rocks along the tunnel walls were clearly detected by normalized chargeability, which is chargeability normalized by resistivity.

**Key words:** IP (induced polarization), nonpolarizable electrode, tunnel wall, resistivity, chargeability, normalized chargeability, sericite deposit

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