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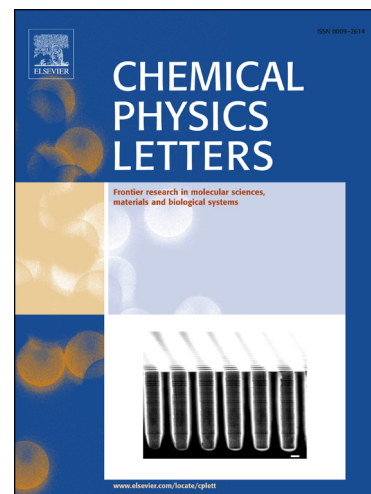
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Abstract: The reactions of the chlorate ion with atomic oxygen formed under photolysis of the nitrate ion introduced to potassium chlorate crystal by co-crystallization were studied by optical and infrared absorption spectroscopy. The perchlorate ion was found to form in solids as product of addition reaction of singlet atomic oxygen, formed under dissociation of the peroxyxynitrite ion - the product of isomerization of the excited nitrate ion. Triplet atomic oxygen does not react with the chlorate ion. The atomic oxygen formed under photolysis of the nitrate ion introduced to potassium perchlorate crystal by co-crystallization does not react with the perchlorate ion.

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