

# 在氫間質中 HBr 與 NO<sub>2</sub> 之光誘導反應

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## 摘要

在 NO<sub>2</sub> 的存在時，以 193nm 雷射光照射光解氫間質中的 HBr 1 小時後，分別得到由 H 原子和 Br 原子與 NO<sub>2</sub> 反應產生之 cis-HONO (3411.0, 1632.9, 1265.8, 850.3, 638.3 及 608.7cm<sup>-1</sup>)、trans-HONO (1688.0, 800.3 及 548.2cm<sup>-1</sup>) 與 trans-BrONO (3412.7, 1723.4, 835.9 及 587.6cm<sup>-1</sup>)。若再繼續以 308nm 雷射光照射間質 30 分鐘後，其中 trans-BrONO 會再光異構化為 BrNO<sub>2</sub> (1659.7, 1291.0, 1196.0 及 782.7cm<sup>-1</sup>)。

## **Photoinduce HBr Reaction with NO<sub>2</sub> in Solid Argon**

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### **Abstract**

HBr was photolyzed with laser at 308 nm in the presence of NO<sub>2</sub>, the IR absorption lines were attributed to cis-HONO (at 3411.0, 1632.9, 1265.8, 850.3, 638.3 and 608.7 cm<sup>-1</sup>), trans-HONO (at 1688.0, 800.3 and 548.2 cm<sup>-1</sup>) and trans-BrONO (3412.7, 1723.4, 835.9 and 587.6 cm<sup>-1</sup>) formed by the reaction of H atoms and Br atoms with NO<sub>2</sub> in solid argon. The photoisomerization of trans-BrONO to BrNO<sub>2</sub> (at 1659.7, 1291.0, 1196.0 and 782.7 cm<sup>-1</sup>) could occur after further irradiation with laser at 308 nm.