

<b>149</b>	<b>CNNi</b>	<b>Nickel cyanide</b>	<b>C<sub>∞v</sub></b>
LIF		Nickel monocyanoide	Ni–C≡N

State	$\tilde{X}_1^2\Delta_{5/2}$
Energy [eV]	0.00
$r_0(\text{Ni–C})$ [Å]	1.8292(28)
$r_0(\text{C}\equiv\text{N})$ [Å]	1.1591(29)

NiCN molecules were produced by the reaction of laser-ablated nickel atoms with cyanogen under supersonic jet-cooled conditions. The isotopic species NiC<sup>15</sup>N was produced in a similar way except that acetonitrile-<sup>15</sup>N was used instead of cyanogen. Laser-excited fluorescence in the region 500...630 nm revealed seven electronic states,  $\tilde{X}_1^2\Delta_{5/2}$ ,  $\tilde{X}_2^2\Delta_{3/2}$ ,  $\tilde{W}_1^2\Pi_{3/2}$ ,  $\tilde{A}^2\Delta_{5/2}$ ,  $\tilde{B}^2\Pi_{3/2}$ ,  $\tilde{C}^2\Phi_{7/2}$  and  $\tilde{D}^2\Phi_{5/2}$ . Rotational constants and bond lengths were determined for the  $\tilde{X}_1^2\Delta_{5/2}$  ground state.

Kingston, C.T., Merer, A.J., Varberg, T.D.: J. Mol. Spectrosc. **215** (2002) 106.