92 **CHTi** **Titanium methylidyne** **$C_{\infty v}$**
LIF Methylidynetitanium Ti≡C−H

State	$\tilde{X}\ ^2\Sigma^+$
Energy [eV]	0.00
r_0(Ti≡C) [Å]	1.7277(3)
r_0(C−H) [Å]	1.085(2)

TiCH and TiCD molecules were produced by the reaction of laser-ablated titanium atoms with methane and methane-d_4 under supersonic jet-cooled conditions. Laser-excited fluorescence in the region 610–840 nm revealed five bands for TiCH and five bands for TiCD. All the bands have the characteristic rotational structure of subbands of a $^2\Pi(a) - {}^2\Sigma^+$ transition of a linear molecule. The excited state levels are perturbed, and so rotational constants and bond lengths were determined only for the ground state.

Barnes, M., Merer, A.J., Metha, G.F.: J. Mol. Spectrosc. **181** (1997) 168.