

## Supporting Information

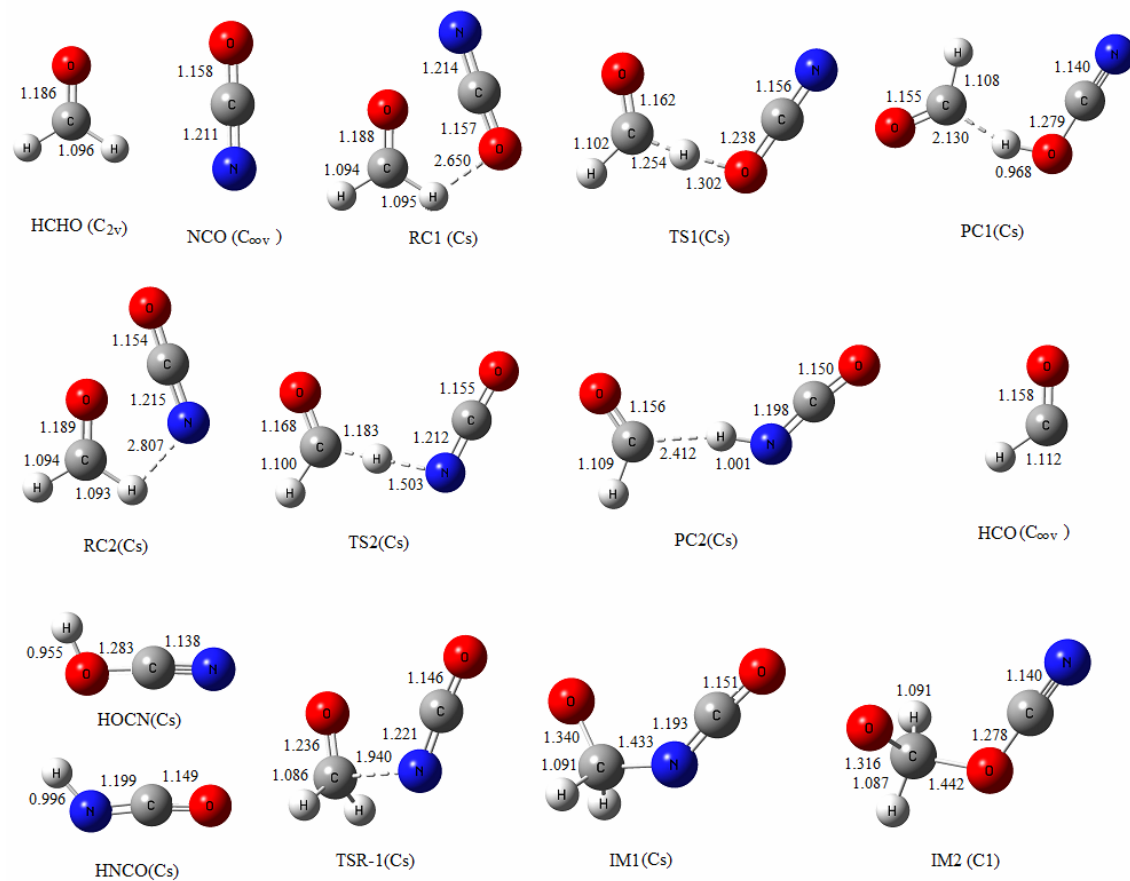
### Theoretical Study on the Water-Assisted Reaction of NCO with HCHO

Benni Du, Weichao Zhang<sup>\*</sup>

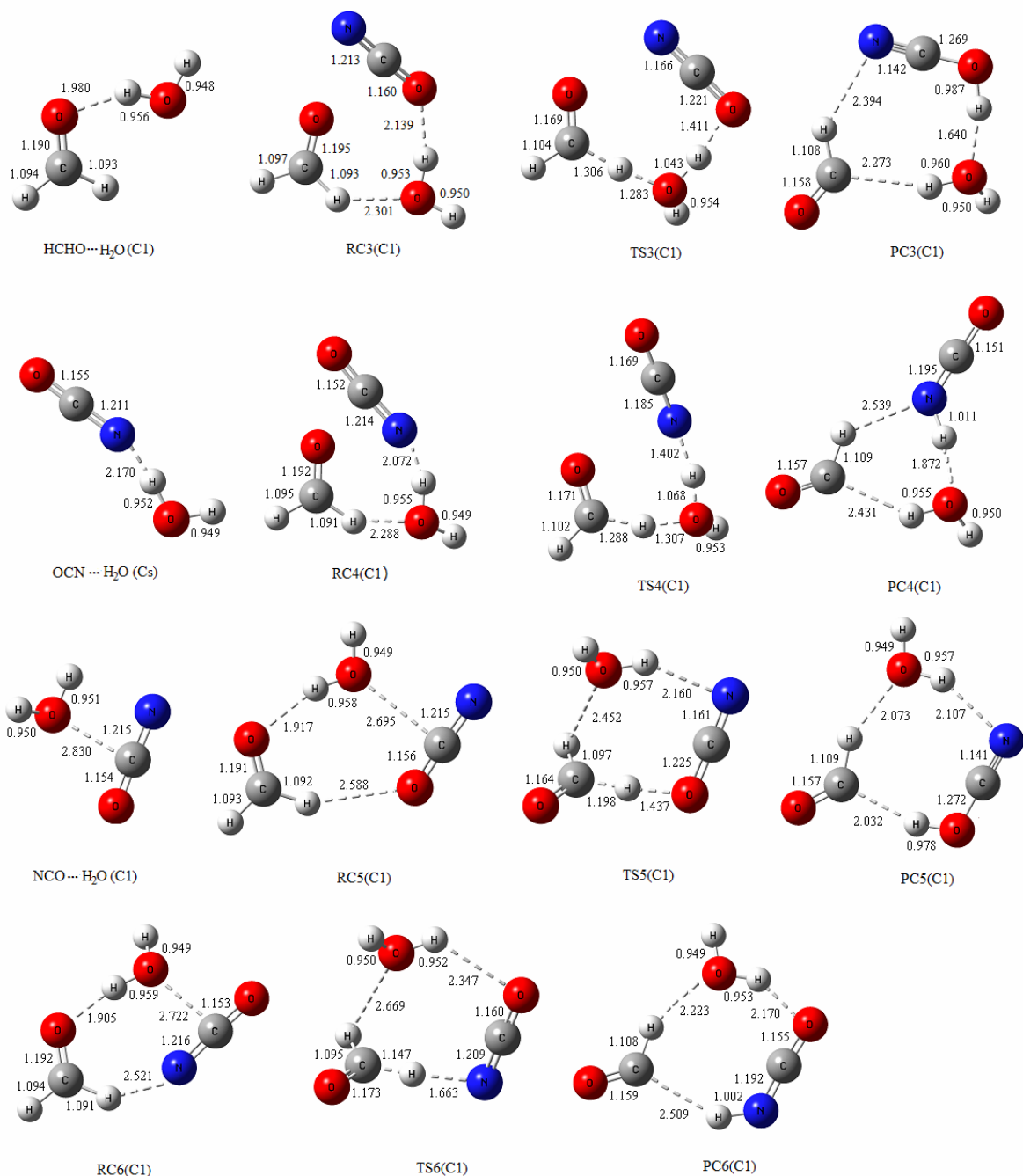
*College of Chemistry and Chemical Engineering and Jiangsu Key Laboratory of Green Synthetic  
Chemistry for Functional Materials, Jiangsu Normal University, Xuzhou, Jiangsu 221116,  
People's Republic of China*

---

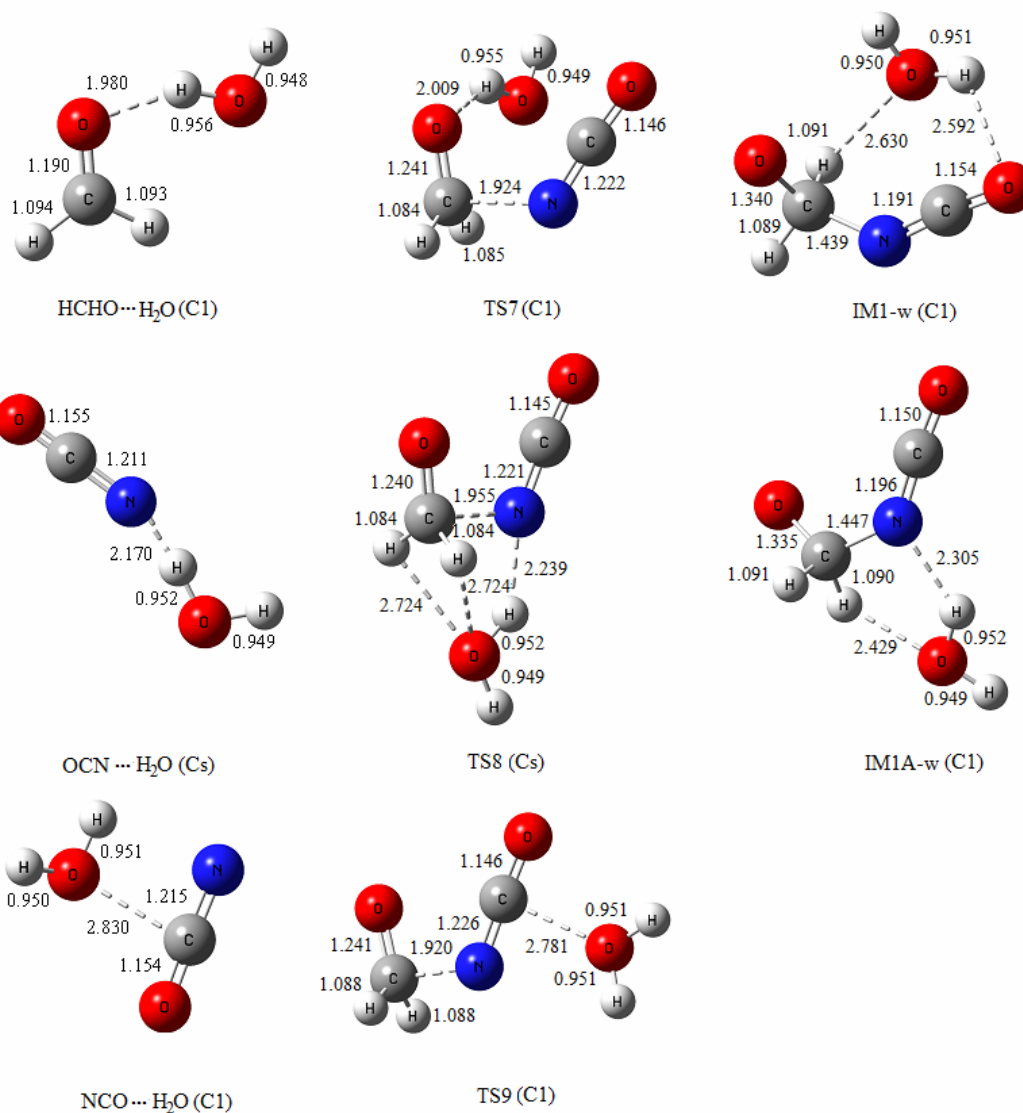
<sup>\*</sup> Corresponding author. Fax: +86-516-83403164.  
E-mail address: zwc@jsnu.edu.cn



**Figure. S1** Optimized geometries for reactants, reactant complexes, intermediates, transition states, product complexes and products involved in the H abstraction and addition reactions of NCO+HCHO without water at the BH&HLYP/6-311++G(3df,3pd) level. Bond lengths are given in angstrom.



**Figure. S2** Optimized geometries for reactant complexes, transition states, product complexes and products involved in the H abstraction reactions of NCO+HCHO with water at the BH&HLYP/6-311++G(3df,3pd) level. Bond lengths are given in angstrom.



**Figure. S3** Optimized geometries for intermediates and transition states involved in the addition reactions of NCO+HCHO with water at the BH&HLYP/6-311++G(3df,3pd) level. Bond lengths are given in angstrom.

### Complete Reference of 37

Frisch, M. J.; Trucks, G. W.; Schlegel, H. B.; Scuseria, G. E.; Robb, M. A.; Cheeseman, J. R.; Scalmani, G.; Barone, V.; Mennucci, B.; Petersson, G. A.; Nakatsuji, H.; Caricato, M.; Li, X.; Hratchian, H. P.; Izmaylov, A. F.; Bloino, J.; Zheng, G.; Sonnenberg, J. L.; Hada, M.; Ehara, M.; Toyota, K.; Fukuda, R.; Hasegawa, J.; Ishida, M.; Nakajima, T.; Honda, Y.; Kitao, O.; Nakai, H.;

Vreven, T.; Montgomery, J. A., Jr.; Peralta, J. E.; Ogliaro, F.; Bearpark, M.; Heyd, J. J.; Brothers, E.; Kudin, K. N.; Staroverov, V. N.; Kobayashi, R.; Normand, J.; Raghavachari, K.; Rendell, A.; Burant, J. C.; Iyengar, S. S.; Tomasi, J.; Cossi, M.; Rega, N.; Millam, N. J.; Klene, M.; Knox, J. E.; Cross, J. B.; Bakken, V.; Adamo, C.; Jaramillo, J.; Gomperts, R.; Stratmann, R. E.; Yazyev, O.; Austin, A. J.; Cammi, R.; Pomelli, C.; Ochterski, J. W.; Martin, R. L.; Morokuma, K.; Zakrzewski, V. G.; Voth, G. A.; Salvador, P.; Dannenberg, J. J.; Dapprich, S.; Daniels, A. D.; Farkas, O.; Foresman, J. B.; Ortiz, J. V.; Cioslowski, J.; Fox, D. J. Gaussian 09, Revision C.01; Gaussian Inc, Wallingford, CT, 2010.