

Supporting Information for

Self-Activated Catalyst Layer for the Partial Hydrogenation of 1,3-Butadiene on a Hydrogen-Precovered Pd(110) Surface

Satoshi Katano[†], Hiroyuki S. Kato[†], Maki Kawai^{†,‡,*} and Kazunari Domen[§]

[†]*Surface Chemistry Laboratory, RIKEN, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan*

[‡]*Graduate School of Frontier Sciences, University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8651, Japan*

[§]*Department of Chemical System Engineering, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan*

* Corresponding author:

Maki Kawai

E-mail: maki@riken.jp Tel : +81-48-467-9405 Fax : +81-48-462-4663

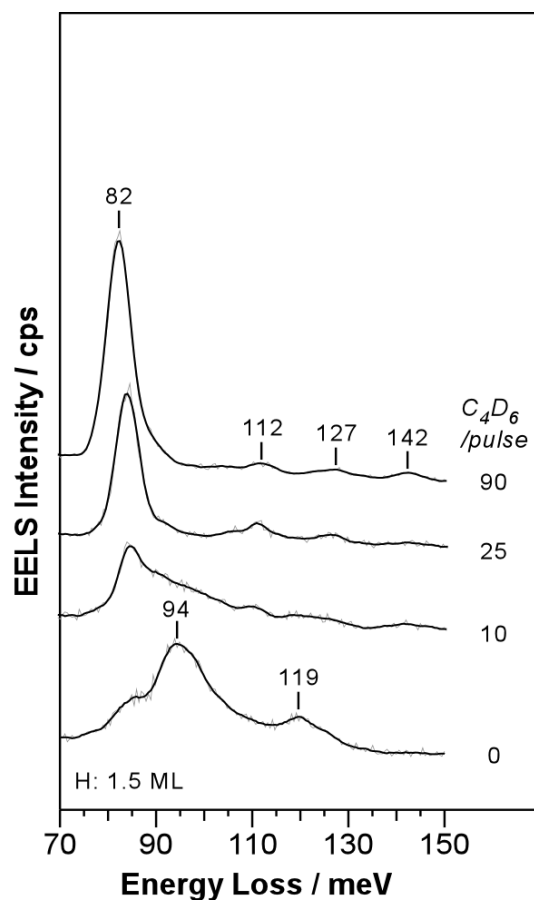


Figure S1. HREEL spectra obtained from the exposure of a 1.5 ML-H/Pd(110) surface at 100 K to various amounts of deuteride 1,3-butadiene (C_4D_6). All the spectra were obtained in the specular mode and were measured at 90 K. Two peaks appeared at 94 and 119 meV are assigned to the vibrational peaks of hydrogen adsorbed on Pd(110). The intensity of these peaks decreased and faded away upon increasing the exposure of C_4D_6 . The peaks, resulting from the adsorption of C_4D_6 , appeared at 82, 112, 127 and 142 meV.