

Supplementary Information

Direct Imaging of Precursor Adcomplex States during Cryogenic-Temperature On-Surface Metalation: Scanning Tunneling Microscopy Study on Porphyrin Array with Fe Adsorption at 78.5 K

Eiichi Inami^{1,2*}, Masataka Yamaguchi¹, Ryohei Nemoto¹, Hideki Yorimitsu³, Peter Krüger^{1,4}, and Toyo Kazu Yamada^{1,4*}

1. Department of Materials Science, Chiba University, 1-33 Yayoi-cho, Inage-ku, Chiba 263-8522, Japan.

2. School of Systems Engineering, Kochi University of Technology, 185 Miyanokuchi, Tosayamada, Kami, Kochi 782-8502, Japan

3. Department of Chemistry, Graduate School of Science, Kyoto University, Kitashirakawa, Oiwakecho, Sakyo-ku, Kyoto 606-8502, Japan.

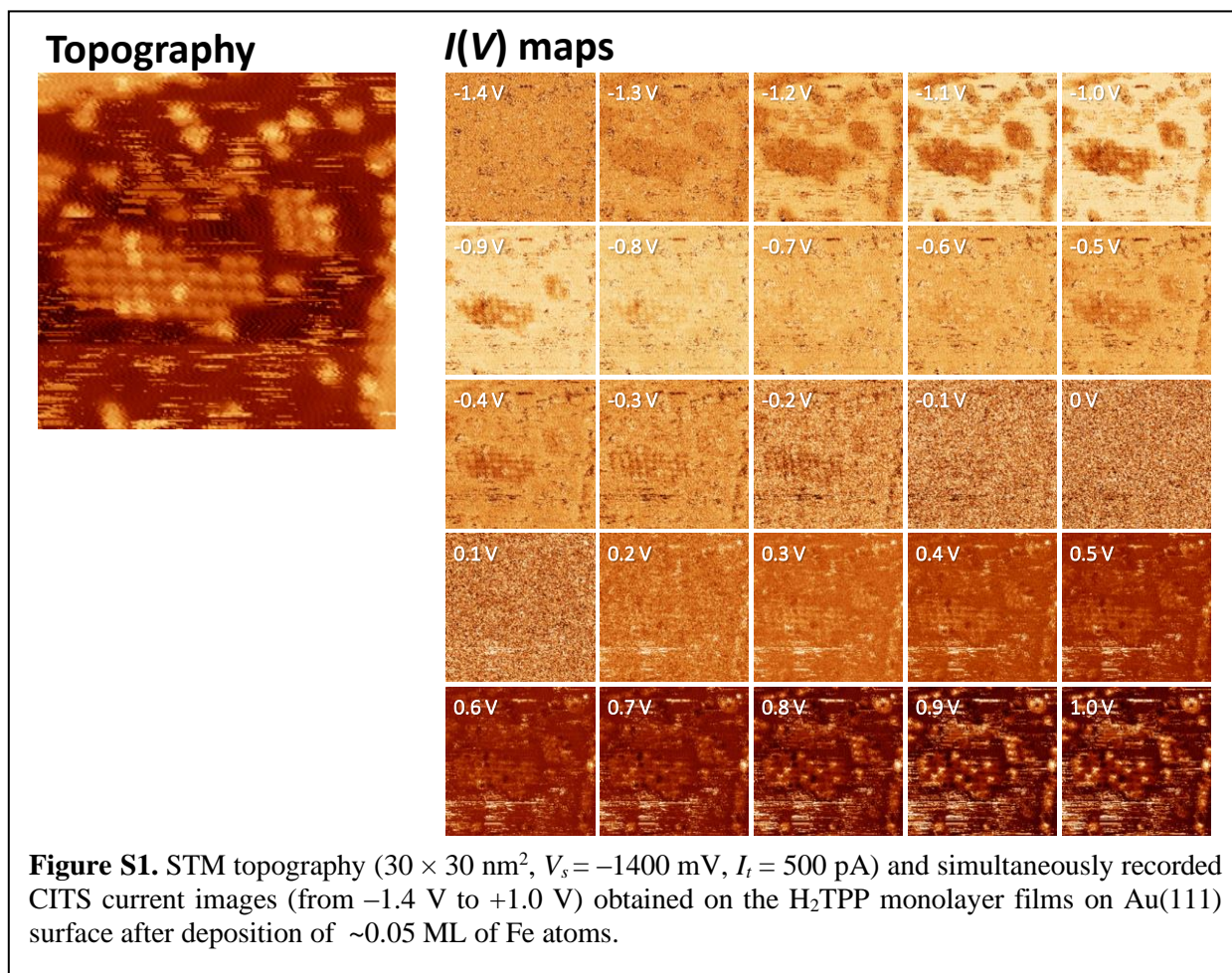
4. Molecular Chirality Research Center, Chiba University, 1-33 Yayoi-cho, Inage-ku, Chiba 263-8522, Japan.

Author Information,

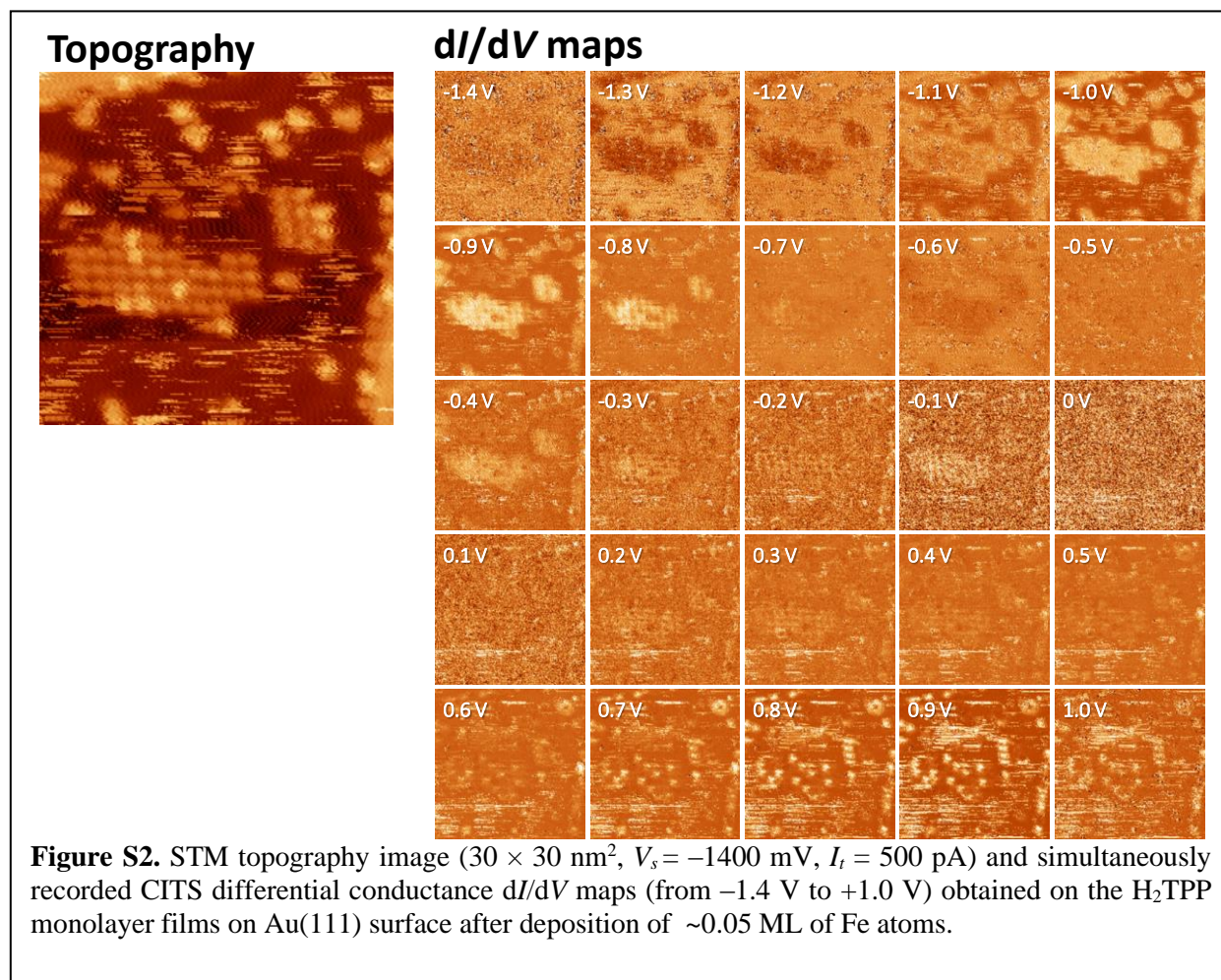
Corresponding Author: Eiichi Inami *E-mail: inami.eiichi@kochi-tech.ac.jp

Corresponding Author: Toyo Kazu Yamada *E-mail: toyoyamada@faculty.chiba-u.jp

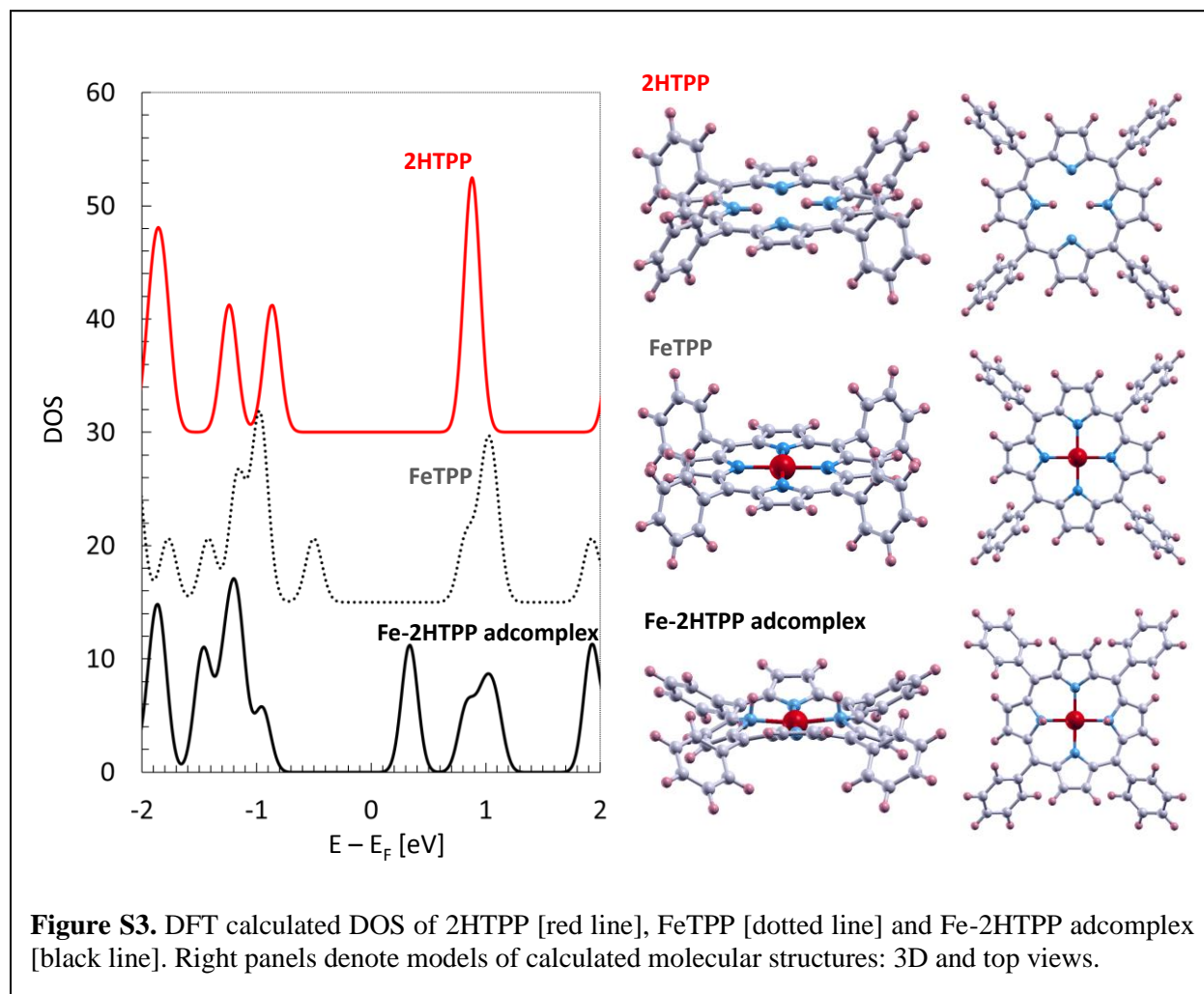
Tunneling current maps ($I(V)$ maps) of Fe atom adsorption on 2HTPP at 78.5 K in UHV.



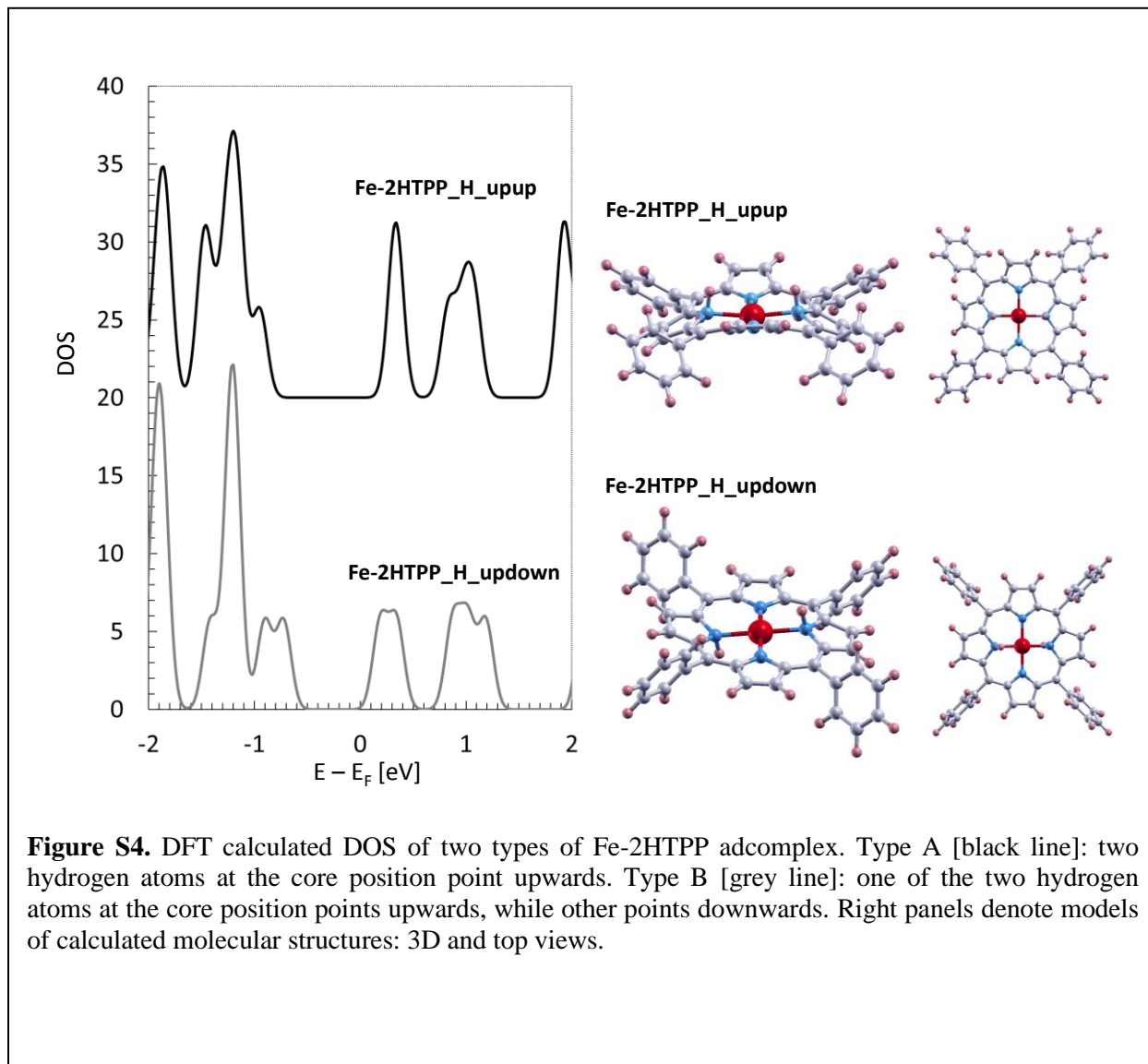
Differential conductance maps (dI/dV maps) of Fe atom adsorption on 2HTPP at 78.5 K in UHV.



DFT calculation results of 2HTPP, FeTPP, and Fe-2HTPP adcomplex.



DFT calculation results of two types of Fe-2HTPP adcomplex.



STM topographic images of one monolayer (ML) H₂Pc film grown on Cu(111) before and after the 0.1 ML Fe deposition at 300 K in UHV.

