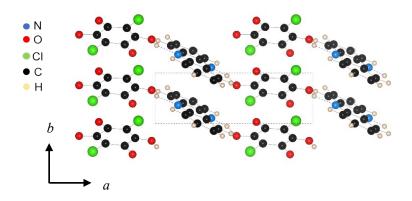
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## Electronic supplementary information

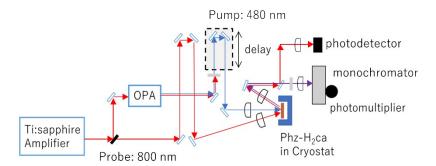
## Ultrafast Variation of Polarized State in Proton- $\pi$ Electron Coupled

## Ferroelectric Cocrystal Phz-H<sub>2</sub>ca

Akihiro Sugisawa, Tsugumi Umanodan, Hongwu Yu, Tadahiko Ishikawa, Shin-ya Koshihara, Sachio Horiuchi, and Yoichi Okimoto



**Figure S1** Molecular structures for Phz and H<sub>2</sub>ca and crystal arrangement viewed along the *c*-axis in the ferroelectric phase.<sup>1</sup>



**Figure S2** Schematic of experimental setup for the relative reflectance change ( $\Delta R/R$ ) and relative SHG intensity change ( $\Delta I_{SH}/I_{SH}$ ) measurements

## References

[S1] R. Kumai, S. Horiuchi, H. Sagayama, T. Arima, M. Watanabe, Y. Noda and Y. Tokura, *J. Am. Chem. Soc.*, 2007, **129**, 12920-12921.