

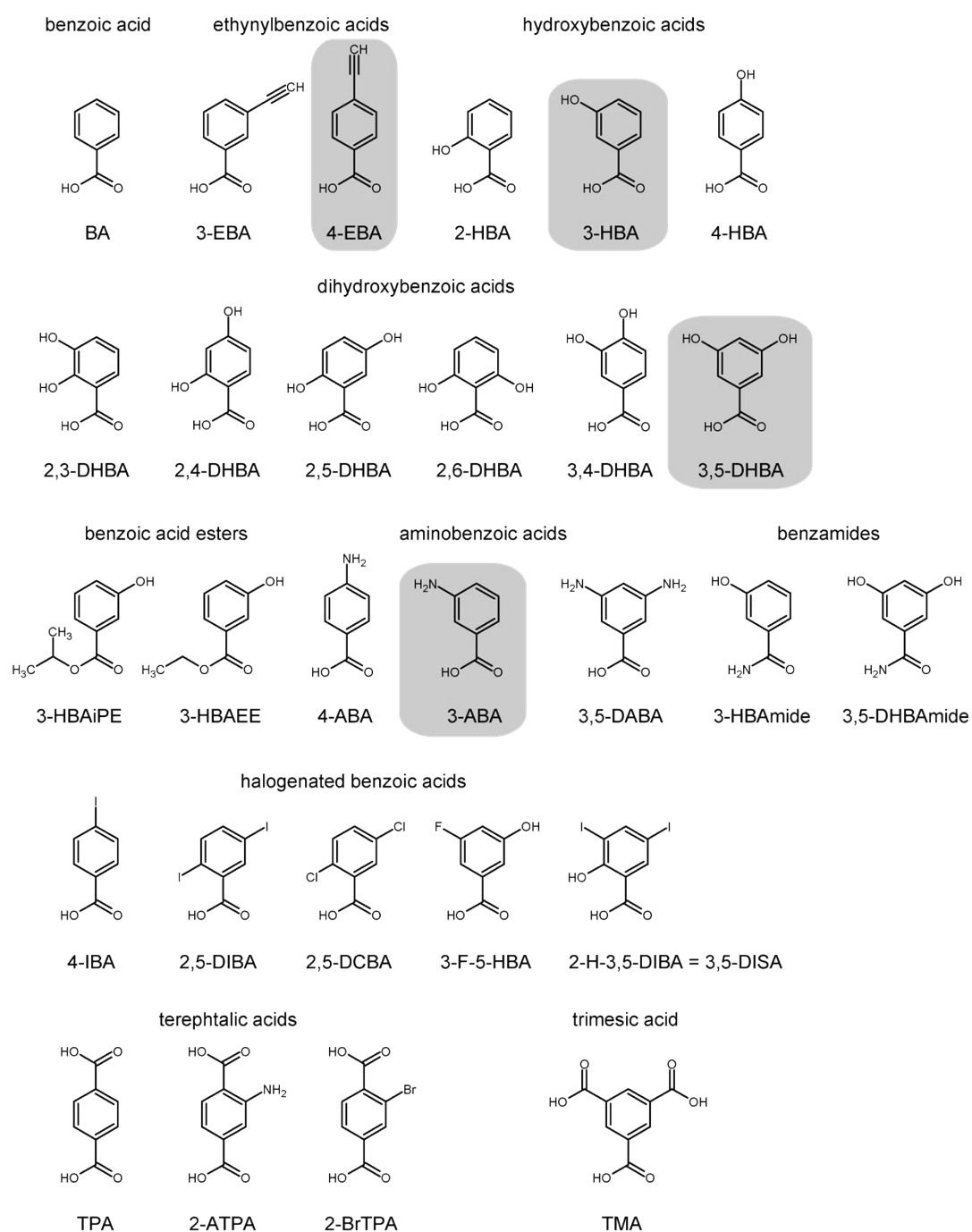
Electronic Supplementary Information for

Generic Nature of Long-Range Repulsion Mechanism on a Bulk Insulator?

J. L. Neff,^a A. Richter,^a H. Söngen,^{a,b} C. Venturini,^c A. Gourdon,^c R. Bechstein^a and A. Kühnle^a

Full list of molecules

In this work, we have investigated twenty-eight different benzoic acid derivatives containing a single phenyl ring. A full list of all molecules is given below. From these twenty-eight molecules, we marked those with grey colour that form stable, uni-directional molecular stripes when deposited onto calcite (10.4) held at room temperature.



From these molecules, the following species have been investigated on calcite (10.4) in previous publications:

3-HBA,^{1,2} 4-HBA,² 2,3-DHBA,² 2,4-DHBA,² 2,5-DHBA,²⁻⁶ 2,6-DHBA,² 3,4-DHBA,² 3,5-DHBA,² 4-IBA,^{4,7} 2,5-DIBA,⁴ 2,5-DCBA,⁴ 3,5-DISA,⁴ TPA,⁸ and TMA.⁸

Movie to illustrate 3-HBA mobility

AFM movie of 3-HBA on calcite at room temperature. The image size is 260 nm x 260 nm. The movie consists of 92 consecutive images acquired within 13 hours and 13 min.

References

1. J. L. Neff, H. Söngen, R. Bechstein, P. Maass and A. Kühnle, *J. Phys. Chem. C*, 2015, **119**, 24927–24931.
2. J. L. Neff, M. Kittelmann, R. Bechstein and A. Kühnle, *Phys. Chem. Chem. Phys.*, 2014, **16**, 15437.
3. M. Kittelmann, P. Rahe, M. Nimmrich, C. M. Hauke, A. Gourdon and A. Kühnle, *ACS Nano*, 2012, **6**, 7406–7411.
4. M. Kittelmann, P. Rahe, M. Nimmrich, C. M. Hauke, A. Gourdon and A. Kühnle, *ACS Nano*, 2011, **5**, 8420–8425.
5. C. Paris, A. Floris, S. Aeschlimann, M. Kittelmann, F. Kling, R. Bechstein, L. Kantorovich and A. Kühnle, *J. Phys. Chem. C*, 2016, **120**, 17546–17554.
6. J. L. Neff and P. Rahe, *Phys. Rev. B*, 2015, **91**, 085424.
7. M. Kittelmann, M. Nimmrich, J. L. Neff, P. Rahe, W. Greñ, X. Bouju, A. Gourdon and A. Kühnle, *J. Phys. Chem. C*, 2013, **117**, 23868–23874.
8. P. Rahe, M. Nimmrich and A. Kühnle, *Small*, 2012, **8**, 2968–2968.