

ESI: Nanogels with tailored hydrophobicity and their behavior at air/water interfaces

Ruiguang Cui^{1, †}, Maret Ickler^{2, †}, Johannes Harrer², Nicolas Vogel^{2, *}, Daniel Klinger^{1, *}

[†] co-first authorship

¹ Freie Universität Berlin, Institute of Pharmacy, Königin-Luise-Str. 2-4,
14197 Berlin, Germany

² Friedrich-Alexander-Universität Erlangen-Nürnberg, Institute of Particle Technology
91058 Erlangen, Germany

* corresponding author: daniel.klinger@fu-berlin.de, nicolas.vogel@fau.de

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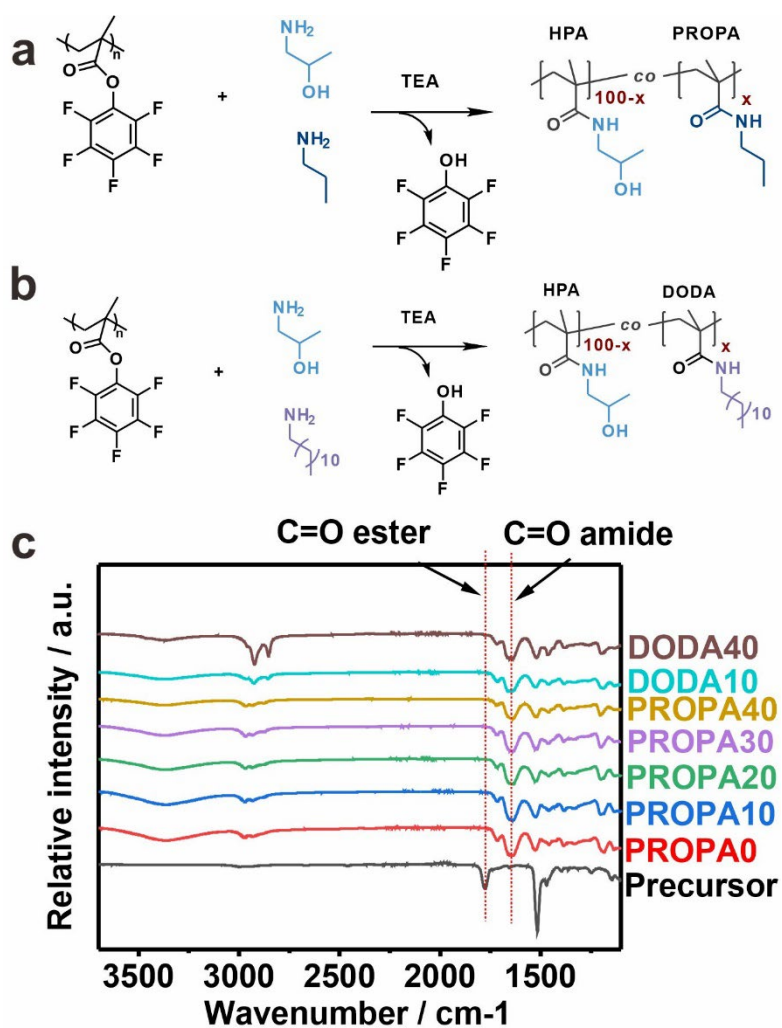
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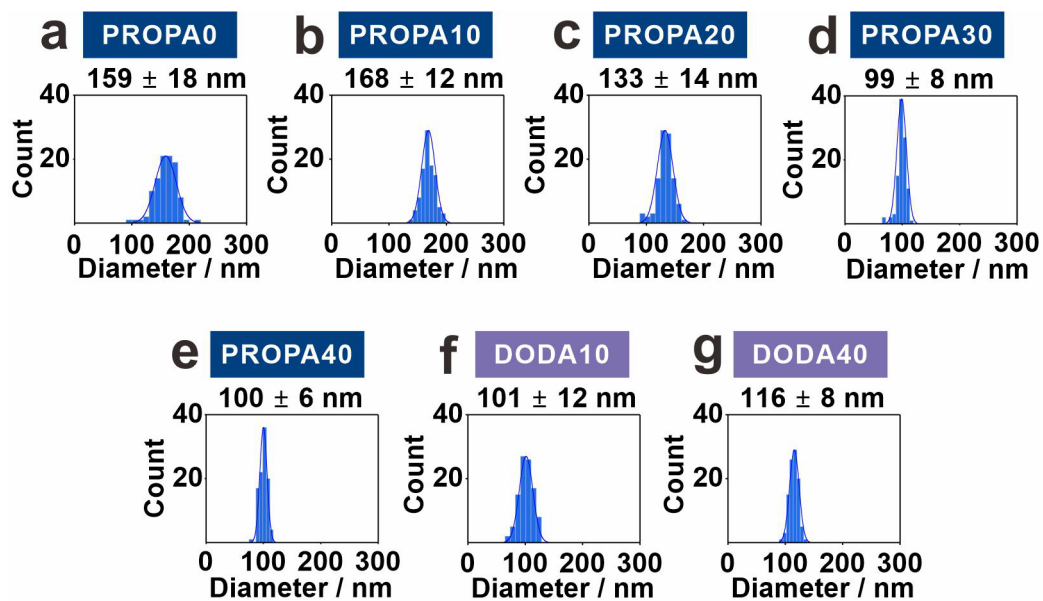
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27 **Figure S1.** (a – b) Reaction scheme to prepare PROPAs and DODAs nanogels via post-
 28 functionalization of reactive ester precursor nanoparticles. (c) FT-IR spectra verify the
 29 complete conversion of reactive esters of the precursor particles to amide bonds of the
 30 functionalized particles.

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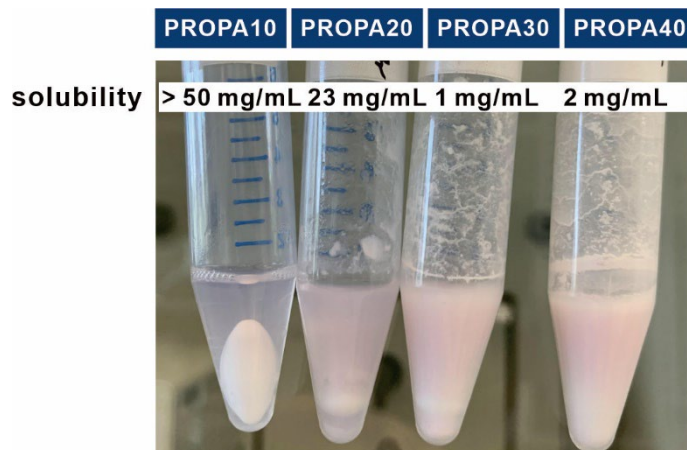


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33 **Figure S2.** (a-e) Nanogel size distribution calculated from TEM images: PROPA0 to PROPA40,
 34 respectively; (f) DODA10 and (g) DODA40.

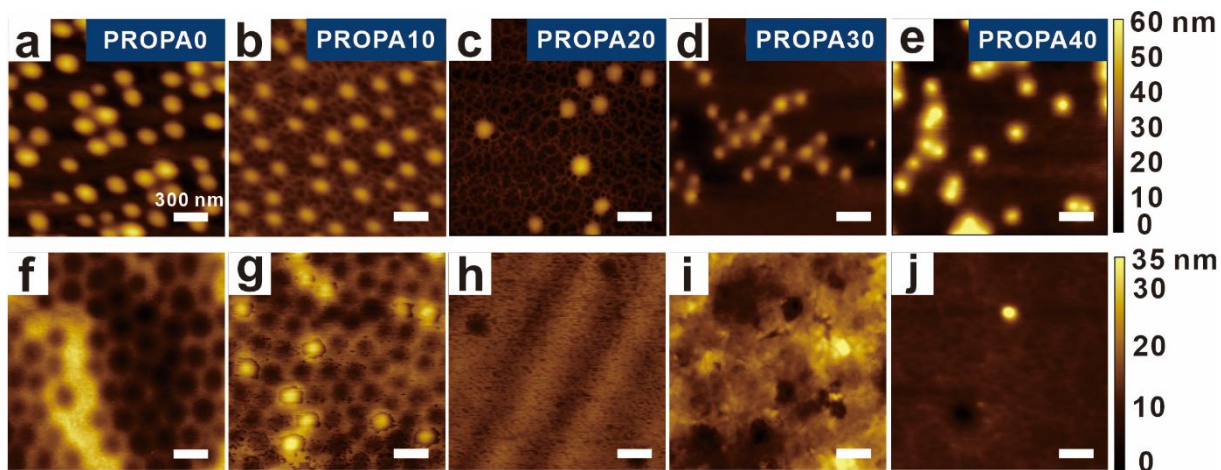
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38 **Figure S3.** Solubility differences of PROPA10 to PROPA40 polymers verify their
 39 hydrophobicity differences.

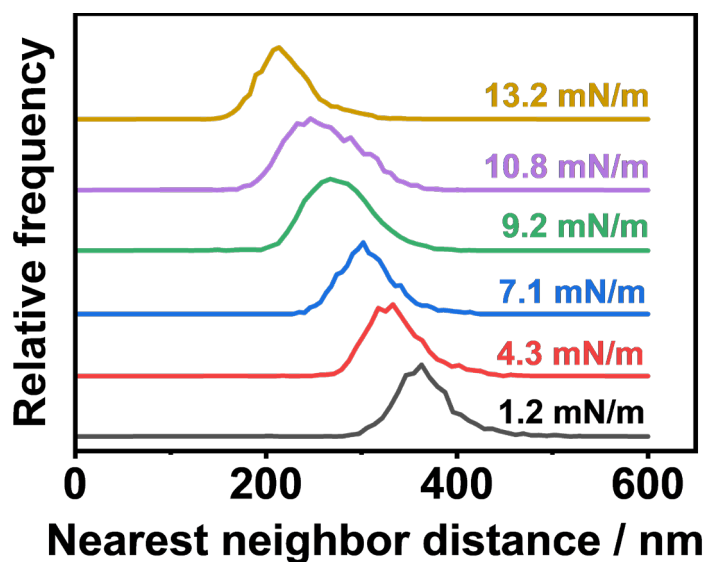


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41 **Figure S4.** (a – e) AFM height images of PROPANANOGEL – PROPANANOGEL40 nanogel on PDMA gel matrices,
 42 indicating the protrusion of nanogels in the water phase. (f – j) AFM height images of cavities
 43 after removing the PROPANANOGEL0 – PROPANANOGEL40 nanogel from the PDMA gel matrices, indicating the
 44 protrusion of nanogels in the air phase. The scale bars are 300 nm for all images.

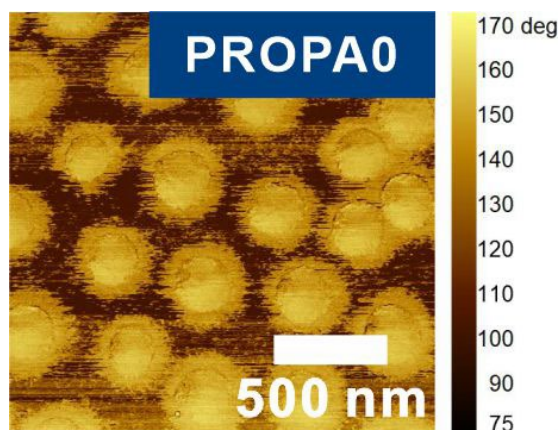
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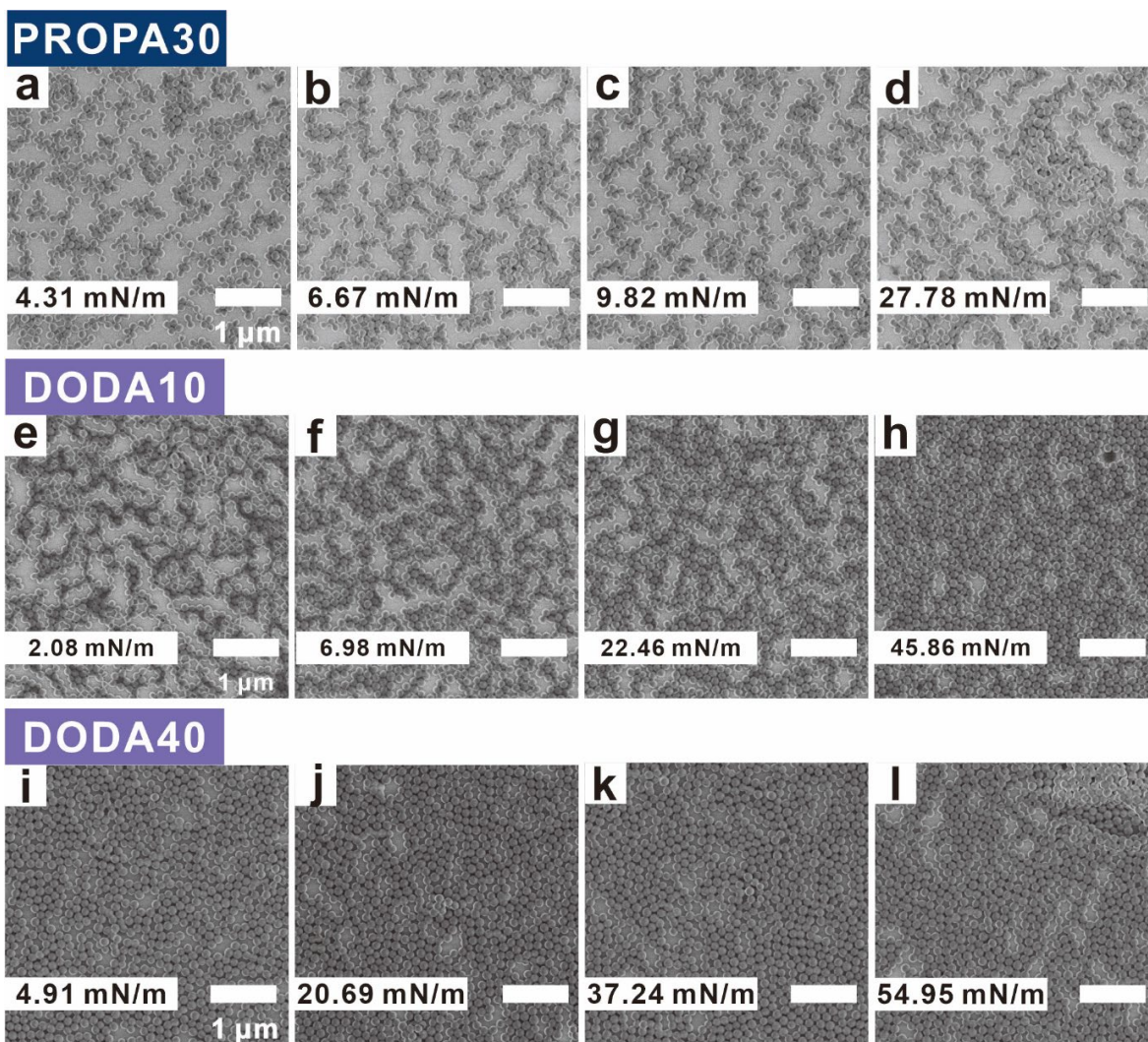
48 **Figure S5.** Nearest neighbor distance (NND) distribution of PROPANANOGEL0 nanogels with increasing
 49 surface pressure, showing a continuous transition towards smaller interparticle distances.



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51 **Figure S6.** AFM phase image of PROPA0 which shows a thin corona after deposited on a solid
52 substrate from the air/water interface.

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55 **Figure S7.** SEM images of nanogels transferred to silicon water from air/water interface under
56 various surface pressure: (a – d) PROPA30, (e – h) DODA10 and (i – l) DODA40.