

Abstract Submitted  
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**Dynamic wetting on soft substrates studied by x-ray imaging** SU JI PARK, JUNG HO JE, Dept. Materials Science and Engineering, Pohang University of Science and Technology (POSTECH) — When a droplet sits on a soft surface, the surface tension of the droplet deforms the underlying material, creating a wetting ridge. Wetting ridge formation affects not only static wetting but also dynamic wetting behaviors. However, the underlying mechanisms are still largely unexplored mostly due to limitations in observation. Here, we directly visualize wetting ridges in real-time during spreading of a liquid drop using x-ray microscopy with high spatial and temporal resolutions. We clearly show that ridge-growth dynamics is closely linked to spreading behaviors. Interestingly, we reveal that the bending of a ridge cusp enhances the pinning force. We believe that our results would shed light on understanding of dynamic wetting behaviors on soft solids (e.g. contact angle hysteresis or evaporation) and be potentially important to interpret complex biological processes on or in soft tissues (e.g. cell-substrate interactions).

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