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| Title: | Optical detection of nanometric surface dynamics of an evaporating sessile droplet |
| Authors: | Verma, Gopal (/jspui/browse?type=author&value=Verma%2C+Gopal) Singh, K.P. (/jspui/browse?type=author&value=Singh%2C+K.P.) |
| Keywords: | Nanometric Surface Dynamics Optical Nanometric Surface |
| Issue Date: | 2014 |
| Publisher: | Optical Society of America |
| Citation: | International Conference on Fibre Optics and Photonics, 2014 |
| Abstract: | We propose a simple optical technique to measure time-resolved nanoscale surface profile of an evaporating sessile fluid droplet. By analyzing Newton ring like high contrast fringes we demonstrated $\lambda/100 \approx 5$ nm sensitivity in surface height change of the air-water interface. This allowed us to precisely measure transient surface dynamics during the contact-line slips, weak perturbations on the evaporation due to external magnetic field and partial confinement of the drop. Further, we demonstrate wide applicability of this technique by measuring the nanoscale surface dynamics of the water drop resting on a deformable oil interface. |
| URI: | https://www.osapublishing.org/abstract.cfm?uri=Photonics-2014-S5A.37 (https://www.osapublishing.org/abstract.cfm?uri=Photonics-2014-S5A.37) http://hdl.handle.net/123456789/2748 (http://hdl.handle.net/123456789/2748) |
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