

Abstract Submitted  
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**Electrohydrodynamics of drops covered with small particles** MALIKA OURIEMI, PETIA VLAHOVSKA, Brown University, School of Engineering — A weakly conductive drop immersed in a more conductive liquid first undergoes an oblate deformation, and then experiences a rotation similar to Quincke rotation when submitted to an increasing DC uniform electrical field. We present an experimental study of a drop with an interface partially or completely covered with microscopic particles. Depending on the field intensity, the surface coverage, and the characteristics of the particles, the drop exhibits: (i) prolate deformation, (ii) emergence of pattern of sustained particle motions, or (iii) decrease of the electrical field that induces rotation.

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