

## Accepted Manuscript

Morphology and flow patterns in highly asymmetric active emulsions

G. Negro, L.N. Carenza, P. Digregorio, G. Gonnella, A. Lamura

PII: S0378-4371(18)30319-4  
DOI: <https://doi.org/10.1016/j.physa.2018.03.011>  
Reference: PHYSA 19345

To appear in: *Physica A*

Received date: 4 November 2017

Revised date: 16 February 2018

Please cite this article as: G. Negro, L.N. Carenza, P. Digregorio, G. Gonnella, A. Lamura, Morphology and flow patterns in highly asymmetric active emulsions, *Physica A* (2018), <https://doi.org/10.1016/j.physa.2018.03.011>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## Morphology and flow patterns in highly asymmetric active emulsions

G. Negro<sup>1</sup>, L. N. Carenza<sup>1</sup>, P. Digregorio<sup>1</sup>, G. Gonnella<sup>1</sup>, A. Lamura<sup>1</sup>

<sup>a</sup>*Dipartimento di Fisica, Università degli studi di Bari and INFN, Sezione di Bari, Via Amendola 173, 70126 Bari, Italy*

<sup>b</sup>*Istituto Applicazioni Calcolo, CNR, Via Amendola 122/D, 70126 Bari, Italy*

---

---

### 1. Highlights

- The morphology and the dynamics of an emulsion made of a polar active gel and an isotropic passive fluid is studied.
- We focus on the case of a highly off-symmetric ratio between the active and passive components.
- The question about how the morphology of the system is affected by activity is addressed.
- In absence of activity the stationary state is characterized by a hexatically ordered array of droplets.
- Small amount of activity favors the elimination of defects in the array of droplets.
- Rising activity new and interesting morphologies arises depending on whether the system is contractile or extensile.

---

\*Principal corresponding author

Download English Version:

<https://daneshyari.com/en/article/7375157>

Download Persian Version:

<https://daneshyari.com/article/7375157>

[Daneshyari.com](https://daneshyari.com)