

Re: Entropy question

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- *From:* Andy Resnick <andy.resnick@xxxxxxxxxxxx>
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Zigoteau wrote:

<snip>

It is not de Gennes' theory, although you might get a different impression from his papers. De Gennes is merely a good publicist. There is another respect in which he conspires to give a misleading impression - the woman who is at his side at conferences, including in the wee small hours, is not his wife.

Heh- this I knew. I guess it's more common knowledge than I thought.

<snip>

Blake's theory clearly neglects dissipation,

?? Clearly ?? I do not know how you have come up with that idea. Any theory which describes constant-velocity meniscus motion must be dissipative. Blake's theory describes a dissipative process. What exactly do you mean by your statement?

Blake's own paper says as much: Phys Fluids 11 (1999) 1995.

Page 2003: "In looking for fundamentals one should start not from Eq. (1)... but from the Young equation."

And the beginning to Section 6 "The problem of modeling", Blake clearly states that when one viscous fluid displaces a non-viscous fluid (presumably referring to dynamic viscosity) then no solution to the Newtonian problem exists.

But then he continues with the Young force-balance equation, which a priori neglects dissipation. In addition to neglecting any line tension

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(a subject still controversial, to be sure).

And in sub-part C, "the model", I really couldn't understand what he is trying to do, especially point (3) on page 2005. He has slip, I think, and that would be dissipative, but there are multiple statements saying there's no *actual* slip (perhaps it's virtual?) ;)

Look, I have no beef with various approaches to solving the problem of contact line motion, and I know various approaches have their own supporters. What is important to realize is that this is still an open problem, and there is room for all (at least until a definitive model has been constructed). And as scientists are wont to do, we bash everyone else's approach because we either have invested time in a particular approach, or we justify one approach based on "aesthetic" considerations. Better to be at least conversant in all approaches.

My prejudicial attitude is on the side of continuum mechanics and condensed matter: phase transitions, etc. I'm not sure that concepts like "contact angle" have a meaning at the atomic level, even though Joel Koplik has done some nice simulation work.

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