Abstract #11

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Dynamical simulations of crude oil on graphene: novel fractionation behavior

Molecular Dynamics computer simulations are used to model the behavior of crude oil confined between graphene planes. The crude oil is represented as a mixture of alkanes having $6 \leq n \leq 30$ carbons which contain explicit hydrogen atoms; the confining structure is a floor and ceiling, each comprised of graphene sheets. The system evolves from a low – temperature adsorbed layer which roughens with increasing temperature and various species desorbing in order of increasing molecular mass. The results presented here are suggestive of a method of separating alkane mixtures at temperatures significantly different from conventional refining processes.

Abstract #12

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Molecular Dynamics computer simulations of perpendicular tetracosane films on graphite

Massively parallel Molecular Dynamics computer simulations are utilized to study the behavior of perpendicular tetracosane patches placed on a graphite substrate precoated with a tetracosane bilayer. The third layer has its molecular axes perpendicular to the substrate plane at low temperature. With heating, the bottom of the patch spreads through gauche defect ratcheting and ultimately it collapses into a shape resembling a droplet. Various energetic and order parameters are used to characterize the behavior of the system over a wide range of temperatures.

Abstract #13

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Bananas are going extinct: The role of emotion and cognition in rumor spreading

According to Heath and Heath (2007), rumors that are simple and concrete, credible, emotionally powerful, and stimulate people's thoughts and behaviors are more likely to be remembered and spread. Our study examined the role of emotion in rumor spread and recall, and further examined other variables such as threat level and relevance and familiarity of the information. We expected that rumors that elicited fear, surprise, disgust, threat, and were more relevant to the participants and believable would be more often remembered.

Participants viewed 18 rumors on a computer screen in random order and then recalled as many as they could after completing a distracter task. A separate sample of participants rated the degree of fear, surprise, disgust, anger, happiness, sadness, threat, and believability elicited by each of the same rumors. Students also rated how relevant the rumor was to them, how likely they would be to spread the rumor, and whether they believed the rumor was true or false. We calculated how often each rumor was recalled in the first part of the study and correlated this "recall score" with the mean scores on each of the survey measures. We found that rumors that elicited sadness, were believed to be true and more likely to be shared with others were more often remembered than other rumors. Participants indicated they would spread a rumor if it elicited more negative emotion.

This information may be helpful for workplaces in determining which information they want to share with employees. If employers perceive that information may lead to negative emotion, they should expect that it will be more likely to be spread to others may consider disclosing information with caution to avoid rumor spreading in the workplace.