

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Cracks formation during blood drop evaporation** BENJAMIN SOBAC, DAVID BRUTIN, Université de Provence, UNIVERSITÉ DE PROVENCE TEAM — We firstly presented the pattern formation occurring when drops of whole blood desiccate in a recent publication [1]. The phenomena presented evidence to involve lots of physical field such as surface chemistry, haematology, fluid mechanics, heat transfer, colloids science... All these mechanisms are acting together and produce an axisymmetric and reproducible pattern. Dried cellular components are segregated and deposited by a capillary flow. During the evaporation, the system is slowly drying and cracks when stresses are too important leading to the final pattern observed. In this presentation, we will present the mechanisms involved in the formation of crack patterns. The phenomenon presented here with red blood cells as the main colloids involved is very similar to the drying of drop of nanoparticles [2]. We will explain the common point and the differences encountered.

[1] D. Brutin, B. Sobac, B. Loquet and J. Sampol, Pattern formation in drying drops of blood, *Journal of Fluid Mechanics*, underpress, 2010.

[2] L. Pauchard, B. Abou, K. Sekimoto, Influence of Mechanical Properties of Nanoparticles on Macrocrack Formation, *Langmuir*, 25(12), 6672-6677, 2009.

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Date submitted: 22 Dec 2010

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