

## Team interviews – chameleon

### 01 How does the chameleon change a users approach to sample preparation?

Compared to using traditional vitrification methods in cryo-EM, the chameleon system is highly automated and reduces the amount of manual handling required during a freezing session. The ability to pre-screen samples even before they go into the microscope allows users to be sure that they have usable thin ice where they can collect data. This makes the screening process more efficient and allows users to optimize their samples faster.



**Michael Cha**

Field Application Scientist

### 02 What advantages do you see chameleon delivering to the bench scientist?

chameleon is a next-generation vitrification device for freezing cryo-EM samples that is capable of high-speed plunge freezing using a blotless method. One especially beneficial feature of chameleon is the ability to pre-screen the ice thickness using the on-board camera, so that less time is spent on the microscope screening different conditions. Due to the automated nature of chameleon, sample preparation is very consistent from sample to sample and the system is capable of keeping track of all the relevant sample information during each experiment.

### 03 What are the advantages of removing the blotting steps by the use of self-wicking grids?

Using self-wicking grids allows researchers to address several detrimental aspects of using a filter paper to blot away the sample. The blotting process may change the buffer characteristics of the sample or cause a significant increase in the protein concentration on the grid. There is some evidence that shear forces could disrupt the structure of long filaments. The air-water interface (AWI) that is formed right after blotting and before plunging is thought to be deleterious to the particles in the thin film and may cause denaturation and preferred orientation effects. chameleon addresses this issue by enabling plunge speeds as fast as 54ms to minimize the time spent at the AWI.

### 04 What role do Field Application Scientists play in training and supporting users?

As a field applications scientist, my job will be to do the initial training of two superusers after installation. From that point, we will provide support in any issues that users may have while using chameleon to freeze their samples. If needed, I am also available to visit on-site in order to work with the customers in a more hands-on manner and to get more personalized attention into how the site is doing.



To learn more about chameleon and our team of experts click [here](#)