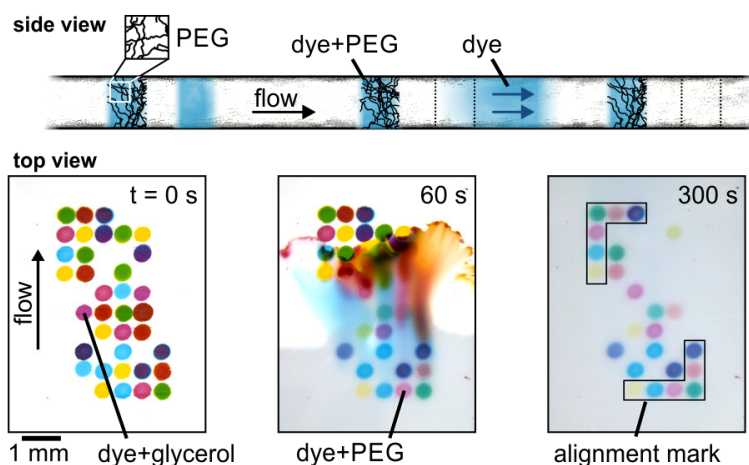


# Master's thesis project on biochemical codes generated on paper microfluidics

August 2020,

## Project Description

The main two challenges of medication are to ensure that (1) drugs and their dosing are safe for patients and (2) that patients take their drugs as prescribed. This Master's thesis project will focus on realising biochemical codes on low cost, disposable, and easy-to-use strip tests for revealing the presence of drugs, or drug metabolites, in samples such as urine or saliva. This will build on the expertise of our group in microfluidics, miniaturised biochemical reactions and the generation and capture of encoded information in the context of mobile health. This challenging project has a very strong potential for publications, dissemination via scientific conferences and workshops, impact in the medical sciences, and networking with various academic and industrial research laboratories.



Example of static and dynamic codes created by ink-jet spotting various inks onto nitrocellulose

## Student profile required

We seek a talented student who wishes to perform his/her Master's thesis on this experimental project at IBM Research - Zurich, with the following desired skills or interests:

- Background in chemistry, biochemistry, material sciences, or pharmaceutical sciences;
- Interest in implementing biochemical reactions on paper or nitrocellulose formats;
- Interest in multidisciplinary research projects and team work.

Work will be supervised by Dr. Emmanuel Delamarche (IBM Research) and experienced team members. Priority will be given to Master's students from local Swiss universities.

Please feel free to e-mail a CV and a short introductory statement to E. Delamarche.



Emmanuel Delamarche  
Precision Diagnostics Group  
IBM Research - Zurich  
[emd@zurich.ibm.com](mailto:emd@zurich.ibm.com)