

卓越した大学院
「流動ダイナミクス知の融合教育研究世界拠点」
平成 27 年度 博士課程後期学生国際会議派遣 参加報告書

氏名／専攻・学年 Name / Department	Cervantes Salguero Keitel Abraham
学会名 Conference's name	21th International Conference on DNA computing and Molecular Programming
開催地 Venue (Name of the facility, city & country)	Wyss Institute for Biologically Inspired Engineering ,Harvard University (ボストン、アメリカ)
日程 Conference period	平成 28 年 8 月 17 日～8 月 21 日
発表タイトル Presentation Title	「Lipid modified DNA rings on hydrophobic surfaces」
<p>【発表概要 Brief summary of your presentation】</p> <p>My poster presentation titled “Lipid modified DNA rings on hydrophobic surfaces” was given on the second day of the “21th International Conference on DNA computing and Molecular Programming” given for first time at Harvard University. The main topic of research for that day was threefold: Chemical Reaction Networks programmed by DNA circuits, integration of DNA nanotechnology with microfabrication techniques, and integration of DNA nanotechnology with biomolecules. In this context my presentation fitted into integration DNA nanotechnology and microfabrication techniques. In particular I presented our work towards harnessing the hydrophobic properties of lipid-modified DNA nanorings on hydrophobic surfaces.</p> <p>In this research, a model DNA nanostructure was modified lipid by means of electrostatic interactions. The final complex exhibited hydrophobic properties due to the hydrophobic shield provided by the lipid. As for example the structure remained stable on a hydrophobic region after complexation.</p>	

【他の講演等から得られた知見、感想等。What you learned from other presentations, general impression you had, etc.】

The audience was very diverse including people from engineering, material sciences, biological, chemical and physical sciences. There were many presentations and speakers that caught my attention but I will talk only about two.

Among the speakers, I could benefit from the always inspiring talk of Paul Rothemund at Caltech, who has a central position in the field of DNA nanotechnology. In his talk he showed submitted results about the directional immobilization of DNA nanostructures on micro-patterned surfaces. This is a breakthrough result since it will open the doors for precise allocation of molecules at much more higher scales. In particular, Rothemund see this work as a platform for fabricating quantum computers.

The other presentation that caught my attention came from Guillaume Gines, who is a postdoc at the Yannick Rondelez group at Tokyo University. In his talk the collective behavior of microparticle, called agents, were programmed by DNA circuits and enzymes. I found this interesting since much of the field direction is going towards out-of-equilibrium systems, and it seems promising the use of DNA circuits and enzymes.

【写真 Pictures】



From the left: the writer with the statue of John Harvard as background, the back of prof John Reif with a high-resolution spectroscopy presentation, with some students from Nagoya and Pennsylvania.