

Yu-Ting SUN

Physical Chemistry & Biophysics

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EDUCATION

01/2008- 12/2010	PhD.Sc	Physics	University of Strasbourg, France
10/2005- 12/2007	M.Sc	Chemistry	University of Siegen, Germany
09/2001- 07/2005	B.Eng	Chemical Engineering	China University of Petroleum (Beijing), P.R.China

RESEARCH EXPERTISE

DNA-protein interactions (Recombinases RecA, RAD51, Dmc1 and accessory proteins Hop2-Mnd1)

Physical behaviors of biopolymers or biomaterials (e.g. DNAs, membranes)

Microfluidic devices: flow cell, nano/micro channel/slit...

Microscopy: TIRF, AFM, RICM...

RESEARCH EXPERIENCE

12/2021- 07/2025	Chemistry Department, National Taiwan University, NTU, Taiwan		
Postdoctoral Associate	<i>RNA-involved Homologue Recombination mediated by E.coli RecA</i> <i>Fidelity study of Recombinase Dmc1 and its Accessory Protein Hop2-Mnd1</i> <ul style="list-style-type: none">• Interdisciplinary collaboration (biochemistry & biophysics). Laboratory maintenance and instrument operation. Supervision of 2 undergraduate students' projects.		
Supervisor	Prof. Hung-Wen Li (NTU, Taipei), Prof. Hung-Yuan (Peter) Chi (IBS, Taipei)		
05/2011-12/2012	Singapore-MIT Alliance of Research and Technology, SMART, Singapore		
Postdoctoral Associate	<i>Dynamic study of biopolymer in microfluidic devices.</i> <ul style="list-style-type: none">• Scientific project management and execution. Participation discussion among BioSyM research groups. Organization of internal lab meetings and collaborator meetings.		
Supervisor	Prof. Patrick Doyle (MIT, U.S.), Prof. Jie Yan (NUS, Singapore)		
01/2008- 12/2010	Institute Charles Sadron, ICS, France		
PhD Dissertation	<i>Kinetic study of the cell adhesion in biomimic system.</i> <ul style="list-style-type: none">• Independent research project execution. Laboratory safety and regulation compliance. Active participation in IRTG workshops and conferences.		
Supervisor	Prof. Carlos Marques, Dr. Schröder André (ICS, Strasbourg)		
11/2006- 12/2007	Max-Planck Institute for Polymer Research, MPIP, Germany		
Master Thesis	<i>Investigating the layering of liquid crystals on surface by AFM</i>		
Master Internship	<i>Developing a new nanolithography technique on polystyrene by AFM.</i>		
Supervisor	Prof. Dr. Hans-Jürgen Butt, Dr. Elmar Bonaccorso (MPIP, Mainz)		

TEACHING EXPERIENCE

12/2013- 08/2015	Beijing Huijia Private School, Beijing, China		
Teacher	Chemistry & Mathematics Teacher <ul style="list-style-type: none">• Taught IB Diploma Program Chemistry & Mathematics (Grade 10-11). Supervised student scientific research projects. Student mentoring and academic guidance		

PUBLICATIONS

Y. L. Sun, XY Li*, C.H Tsai, HY. Yeh, CR. Neoh, N.L. Chan, P. Chi, HW. Li , “Mechanism of RNA Involved Homologous Recombination Mediated by E. coli RecA”, ready to submit (2025) * Equal Contribution.

JC. Peng, HY. Chang, **Y.L. Sun**, Mara Prentiss, HW. Li, P. Chi, “Hop2-Mnd1 functions as a DNA sequence fidelity switch in Dmc1-mediated DNA recombination.” Nat Commun. 15(1):9266.(2024).

Y. Sun, C.M. Marques, and A.P. Schröder, “Adhesion of giant unilamellar vesicles on double-end grafted DNA carpets.” Eur. Phys. J. Spec. Top. 223,1755-1769 (2014).

Y. L. Sun, N. K. Mani, D. Baigl, T. Gisler, A.P. Schröder, C.M. Marques, “Photocontrol of End-Grafted λ -phage DNA.” Soft Matter 7, 5578-5584 (2011) (**Inside front cover**).

G. Nam, M.L. Hisette, **Y.L. Sun**, T. Gisler, A. Johnner, F. Thalmann, A.P. Schröder, C.M. Marques, N-K Lee, “Scraping and stapling of end-grafted DNA chains by a bio-adhesive spreading vesicle reveal chain internal friction and topological complexity.” PRL 105, 088101 (2010) (**Cover story**).

PRESENTATIONS

2023-2025	27 th - 29 th Biophysics Conference	Taiwan	Poster (29 th)
02.2010	Seminar in Department of Chemical Engineering and Materials Science	Davis, USA	Seminar
02.2010	Biophysical Society 54 th Meeting	San Francisco, USA	Poster
11.2009	Jülich Soft Matter Days 2009	Bonn, Germany	Invited Talk
09.2009	Soft Condensed Matter Physics of Model Systems	Grenoble, France	Contributed Talk
06.2009	Journées Scientifiques ICS-LIPHT	Albé, France	Contributed Talk
02.2009	Frontiers of Soft Condensed Matter 2009	Les Houches, France	Poster

SKILLS

LANGUAGE: Chinese: native. English: fluent.

COMPUTER: Python

AWARDS

2008-2010	IRTG Soft Matter Science Scholarship
2003	Contemporary Undergraduate Mathematical Contest in Modeling successful participant
2002-2004	Outstanding Students' Leader Award (TWICE) Outstanding Students' Scholarship (TWICE)