

Bulletin of the American Physical Society

APS March Meeting 2024

Monday–Friday, March 4–8, 2024; Minneapolis & Virtual

Session Q33: Dynamics of Polymers and Polyelectrolytes III

3:00 PM–6:00 PM, Wednesday, March 6, 2024

Room: 102E

Sponsoring Unit: DPOLY

Chair: Laura-Roxana Stingaciu, Oak Ridge National Lab

Abstract: Q33.00001 : Conformational dynamics of submicron-sized wormlike polyelectrolyte chain in viscous fluid flows*

3:00 PM–3:12 PM

[Abstract →](#)

Presenter:

Myung-Suk Chun

(Korea Institute of Science and Technology)

Authors:

Myung-Suk Chun

(Korea Institute of Science and Technology)

Min Sun Yeom

(Mediazen, Inc.)

Collaborations:

Complex Fluids Laboratory, Digital Bio R&D Center

Polyelectrolytes are distinguished from neutral polymers, due to the long-range interactions resulting from charged chains and mobile counterions. We investigated the single chain of polyelectrolyte in the external flow fields by extending our previous studies on coarse-grained Brownian dynamics simulation. Submicron-sized xanthan biopolymer was chosen as a model polyelectrolyte that includes the hydrodynamic interaction and the electrostatic screening effect taking into account wormlike chains. Conformational properties, such as radius of gyration and static structure factor, are unchanged with the flow strength (i.e., Weissenberg number) in the uniform flow. In contrast, influences by flow strength as well as flow type become evident in both simple shear and extensional-like flows with non-zero velocity gradients in flow regimes, commonly representing a sigmoidal transition in the radius of gyration. Transition to a higher plateau can be encountered earlier with increasing flow strength, as a remarkable feature in extensional-like flow. The translational self-diffusion increases when increasing either flow strength or electrostatic screening effect in uniform and simple shear flows. Regarding the scaling behavior of static structure factor, the Flory-Edwards exponent decreases with higher values of flow strength and flow type parameters. For the verification, we also examined the image tracking using a fluorescence microscope and the displacing motion of individual molecule.

*Supported by the KIST Institutional Program (project no. 2E32452)

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APS March Meeting 2024- Abstract Acceptance Confirmation

보낸사람 "APS March Meeting 2024" <abs-help@aps.org>
받는사람 mschun@kist.re.kr

2023-12-22 07:07 (GMT +0900)



Please read this entire email for important information regarding your presentation.

Dear [Myung-Suk Chun](#), Ph.D,

Congratulations! Your abstract has been accepted and scheduled for a presentation at APS March Meeting 2024. See below for your scheduling details and more important information regarding your presentation. Please save this email for reference.

REVIEW THE TIME OF YOUR SESSION/TALK

All listed times are in Central Standard Time. Please double-check the time of your presentation the week before the meeting, to ensure that you are prepared. APS reserves the right to adjust certain presentation times.

[APS MARCH MEETING 2024 SCIENTIFIC PROGRAM](#)

SCHEDULING NOTICE FOR:

Unconfirmed Contributed Oral
Speaker:

[\(Q33\) Conformational dynamics of submicron-sized wormlike polyelectrolyte chain in viscous fluid flows](#)
[Dynamics of Polymers and Polyelectrolytes III](#)
Room: : 102E
[3/6/2024, 3:00 pm - 6:00 pm](#)

For sessions being held in Minneapolis, you will not be able to present remotely. If your talk is scheduled in a session that starts with "V:", this means you have been placed in a "Virtual Only" session.

ACTION REQUIRED

To accept or decline this notice you will need to click on the link below.

[Conformational dynamics of submicron-sized wormlike polyelectrolyte chain in viscous fluid flows](#)

Once you accept your presentation, you will receive an email to update your speaker profile. Communication regarding your presentation will be sent to the email provided in your profile.

As part of your speaker profile, you must grant APS licensing to your abstract/presentation. Additionally, you must respond to the consent to record questions in order to present. Completing this section is required.

Note: You will not be able to change your answers after the deadline of **Thursday, January 18, 2024**.

APS will not be held responsible if, as a presenter, you neglect to inform us of any changes to your consent to record status.

REGISTRATION & TRAVEL NEXT STEPS

All presenters are required to register. Note: Your speaker profile email must match your registration email address.

[Register now](#) before the early bird discount expires on January 17.

[Book your hotel room](#) in the APS block for affordable rates in the most convenient hotels. APS has secured discounted housing rates for March Meeting 2024 attendees at our headquarters hotel, the Hyatt Regency Minneapolis, as well as at the Holiday Inn Express Hotel & Suites Downtown Minneapolis, Millennium Minneapolis, and Hilton Minneapolis.

SESSION FORMATS

The in-person March Meeting 2024 will take place at the Minneapolis Convention Center in Minneapolis, Minnesota, March 3-8, 2024. The virtual March Meeting 2024 will take place simultaneously with the in-person meeting.

The March Meeting mobile app and virtual platform will be linked. We encourage all presenters to create a speaker profile to increase networking and collaboration. Once the platform is available, you will be sent setup instructions.

Invited, Focus and Contributed Sessions

March Meeting 2024: Session Chair

보낸사람 "APS March Meeting" <meetings@aps.org>

2024-01-09 02:09 (GMT +0900)

받는사람 mschun@kist.re.kr



Dear Dr. Myung-Suk Chun:

APS is in need of contributors to chair an in-person session at March Meeting 2024. Our records show that you are able to be a **session chair** during the abstract submission process.

If you are interested, please [fill out this form](#) by **Friday, January 26, 2024 at 5:00 p.m. ET**.

All in-person sessions must be chaired by an in-person chair and cannot be chaired remotely. Once your proper schedule is matched to chair a session (DSOFT or DFD), we will notify you via email with the date and time of the assigned session.

Thank you in advance!

APS Meetings Department

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You are receiving this message because you expressed interest in volunteering to chair an in-person session at the 2024 APS March Meeting.

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