











工学系WINGS產学協創教育推進基金

第383回GMSI公開セミナー/第128回WINGSセミナー

Swinging Edges of Growing Carbon Nanotubes: Thermodynamics and Kinetics

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Date: Wednesday, April 12, 2023 14:30-15:30 Venue: Faculty of Engineering Bldg. 2, 31B

Abstract:

Recent measurements of the growth kinetics of individual carbon nanotubes revealed abrupt changes in the growth rate of nanotubes maintaining the same crystal structure. These stochastic switches call into question the possibility of chirality selection based on growth kinetics. A simple model, supported by Kinetic Monte Carlo and Molecular Dynamics simulations, shows that these switches are caused by tilts of the growing nanotube edge between two main orientations, close-armchair or close-zigzag, inducing different growth mechanisms. Beyond providing new insights on nanotube growth, these results point to ways to control the dynamics of nanotube edges, a key requirement for producing arrays of long structurally-selected nanotubes.





Registration https://forms.gle/XXJcFDr ibCQaZeux6 Please register by Apr. 10.

主催: 東京大学大学院工学系研究科専攻間横断型教育プログラム 機械システム・イノベーション (GMSI)

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