

第348回GMSI公開セミナー／第171回CIAiSセミナー／第93回WINGSセミナー

Flexible and Durable Organic/Perovskite Solar Cells Using Functionalized Fullerenes and Carbon Nanotubes --Molecular Dynamics & Nanotechnology--

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Date: 27, October. 2020, 13:00-14:45

Venue: Online (zoom)

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Abstract:

This lecture involves organic thin-film solar cells and perovskite solar cells utilizing fullerene derivatives and functionalized carbon nanotubes. Fullerenes and carbon nanotubes are properly functionalized to obtain high-performance and long-live organic solar cells. With this investigation, we are aiming to realize a new stable and highly efficient solar cell that uses carbon as the main constituent material by replacing each inorganic part of the organic solar cells with nanocarbon materials.

References

J. Am. Chem. Soc. 2015, 137, 7982; Nano Lett. 2015, 15, 6665; Adv. Electron. Mater. 2016, 2, 1500341; Sci. Rep. 2016, 6, 31348; Adv. Energy Mater. 2017, 7, 1700449; Adv. Mater. 2017, 29, 1702141; J. Phys. Chem. Lett. 2017, 8, 5395; J. Phys. Chem. C 2017, 121, 25743; J. Mater. Chem. A 2018, 6, 1382; J. Mater. Chem. A 2018, 6, 5746; Angew. Chem. Int. Ed. 2018, 57, 4607; J. Mater. Chem. A 2019, 7, 4072; Adv. Energy Mater. 2019, 9, 1901204; Chem. Commun. 2019, 55, 11837; Chem. Mater. 2019, 31, 8432; J. Am. Chem. Soc. 2019, 141, 16553.



主催:

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