

第355回GMSI公開セミナー／第178回CIAiSセミナー／第100回WINGSセミナー

Synthesis of nanomaterials -Nanotechnology-

Professor Yan Li

College of Chemistry and Molecular Engineering, Peking University
Fellow of School of Engineering, The University of Tokyo

Date : Tuesday, 26th October, 2021 13:00-14:45

Venue : Online (zoom)

Abstract:

Synthesis and preparation of nanomaterials will be discussed with the special emphasis on chemical vapor deposition (CVD) growth of single-walled carbon nanotubes (SWCNT). Top-down techniques such as ball-milling, spray, physical vapor deposition (PVD), and molecular beam epitaxy (MBE) are compared with bottom-up approaches as precipitation, hydrothermal & solvothermal methods, sol-gel, micelle or micro-emulsions as micro-reactors, Capping agent assisted method, chemical vapor deposition (CVD), atomic layer deposition (ALD). Finally, CVD growth of SWCNT will be discussed. The chirality-specific growth is the main challenge of the research field [1,2].



- [1] F. Yang, X. Wang, D.Q. Zhang, J. Yang, D. Luo, Z.W. Xu, J.K. Wei, J.-Q. Wang, Z. Xu, F. Peng, X.M. Li, R.M. Li, Y.L. Li, M.H. Li, X.D. Bai, F. Ding, Y. Li*, Chirality-specific growth of single-walled carbon nanotubes on solid alloy catalysts. *Nature*, 510, 522-524, (2014).
- [2] F. Yang, M. Wang, D. Zhang, J. Yang, M. Zheng*, Y. Li*, Chirality pure carbon nanotubes: growth, sorting, and characterization, *Chem. Rev.*, 120, 2693-2758, (2020).

* If you want to join, please contact: office@gmsi.t.u-tokyo.ac.jp

[Graduate student registered for 'Nanotechnology' class can directly join from ITC-LMS.]

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)
最先端融合科学イノベーション教育研究コンソーシアム (CIAiS)
未来社会協創 国際卓越大学院 (WINGS CFS)
未来社会デザインフェローシップ (DFS)
量子科学技術フェローシッププログラム (Q-STEP)
PKU-UTokyo SGU program

本件連絡先 :

東京大学大学院工学系研究科機械工学専攻 教授 丸山 茂夫
GMSI事務局 E-mail: office@gmsi.t.u-tokyo.ac.jp Phone: 03-5841-7437