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Synthesis of nanomaterials -Molecular Dynamics & Nanotechnology-

Professor Yan Li

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

Date：13, October. 2020, 13:00-14:45
Venue：Online (zoom)
If you want to join, please contact: office@gmsi.t.u-tokyo.ac.jp

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 microemulsionsas microreactors, 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].

References

[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).

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）

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: 03-5841-0696