

# Supplementary Materials: Scalable Fabrication of Modified Graphene Nanoplatelets as an Effective Additive for Engine Lubricant Oil

Duong Duc La <sup>1,\*</sup>, Tuan Ngoc Truong <sup>1</sup>, Thuan Q. Pham <sup>1</sup>, Hoang Tung Vo <sup>2</sup>, Nam The Tran <sup>2,\*</sup>, Tuan Anh Nguyen <sup>3</sup>, Ashok Kumar Nadda <sup>4</sup>, Thanh Tung Nguyen <sup>5</sup>, S. Woong Chang <sup>6</sup>, W. Jin Chung <sup>6</sup> and D. Duc Nguyen <sup>7,\*</sup>

- <sup>1</sup> Institute of Chemistry and Materials, Nghia Do, Cau Giay, Hanoi 10000, Vietnam; ngoctuan109@gmail.com (T.N.T); phamquangthuan1982@gmail.com (T.Q.P.)
  - <sup>2</sup> Environmental Institute, Vietnam Maritime University, Haiphong city 180000, Vietnam; tungvh.vmt@vamaru.edu.vn
  - <sup>3</sup> Advanced Nanomaterial Lab, Applied Nano Technology Jsc., Xuan La, Tay Ho, Hanoi 100000, Vietnam; mark@nanoungdung.vn
  - <sup>4</sup> Department of Biotechnology and Bioinformatics, Jaypee University of Information Technology, Waknaghat 173215, India; ashok.nadda@juit.ac.in
  - <sup>5</sup> Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi 100000, Vietnam; tungnt@ims.vast.ac.vn
  - <sup>6</sup> Department of Environmental Energy Engineering, Kyonggi University, Suwon 16227, Korea; swchang@kyonggi.ac.kr (S.W.C.); cine23@kyonggi.ac.kr (W.J.C)
  - <sup>7</sup> Institution of Research and Development, Duy Tan University, Da Nang 550000, Vietnam; nguyendinhduc2@duytan.edu.vn; nguyensyduc@gmail.com (D.D.N.)
- \* Correspondence: duc.duong.la@gmail.com (D.D.L.); thenam@vamaru.edu.vn (N.T.T.); nguyendinhduc2@duytan.edu.vn or nguyensyduc@gmail.com (D.D.N.); Tel.: +84-966-185368 (D.D.L.)

This provides further information about the SEM images of graphene nanoplatelets. This material is available free of charge via the internet.

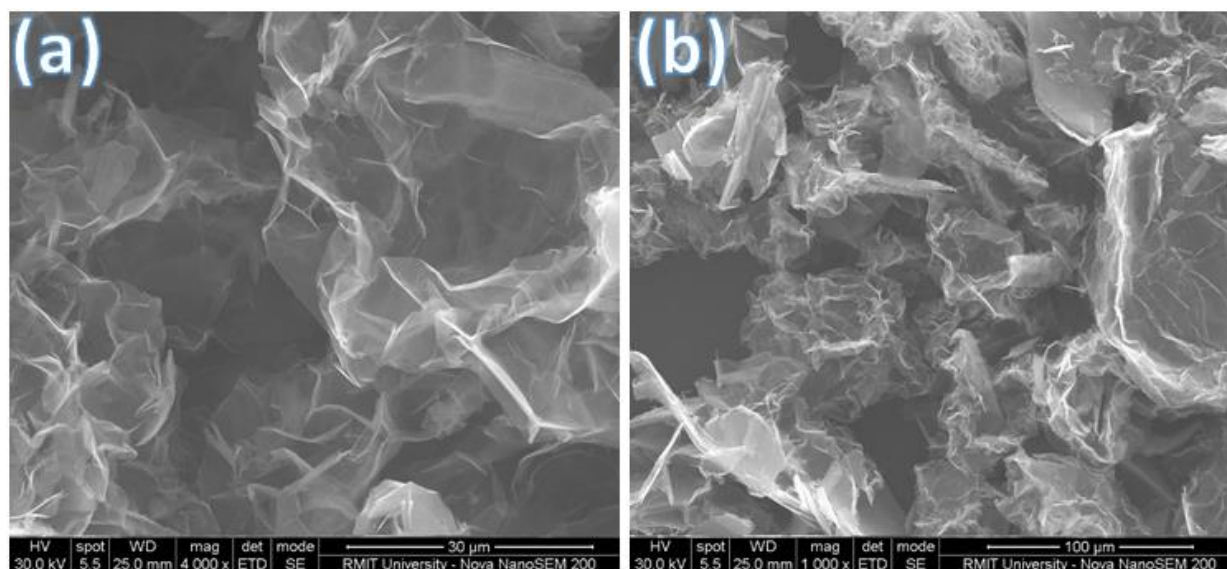
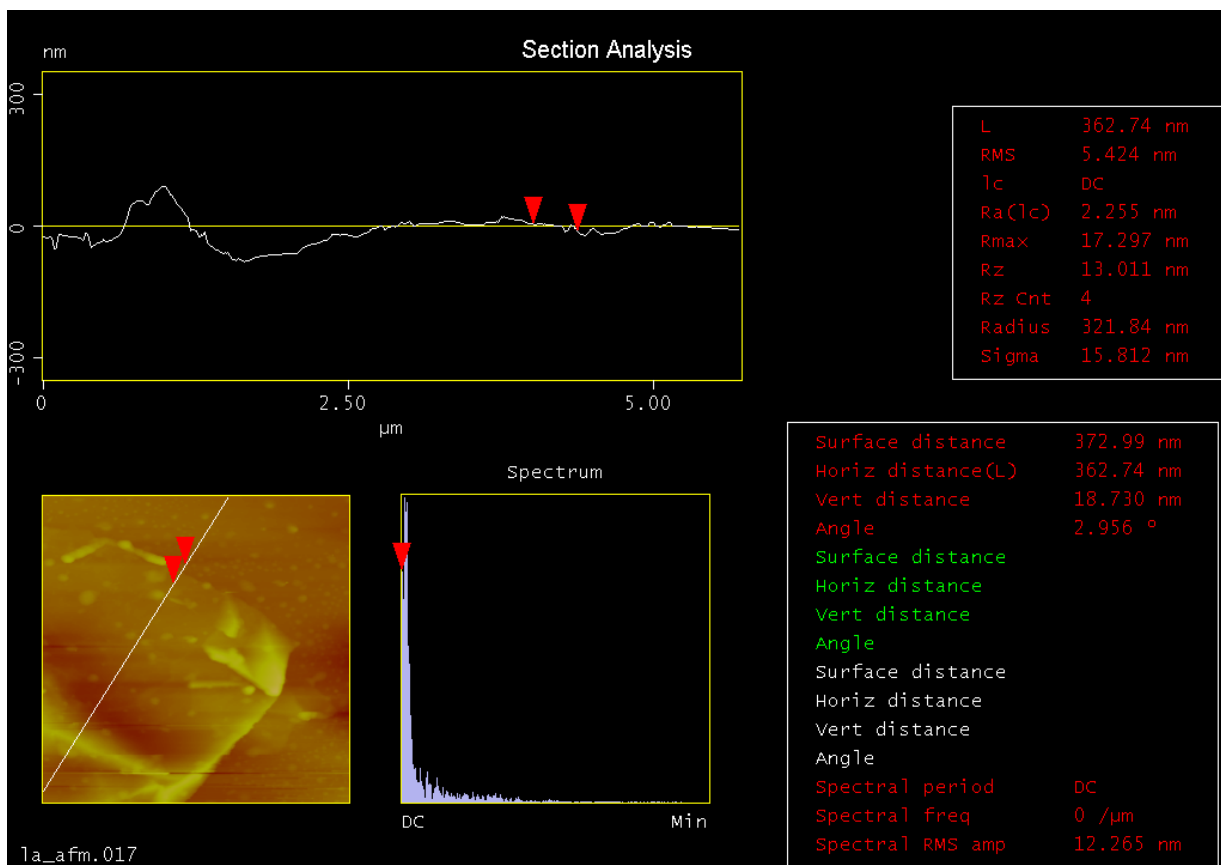
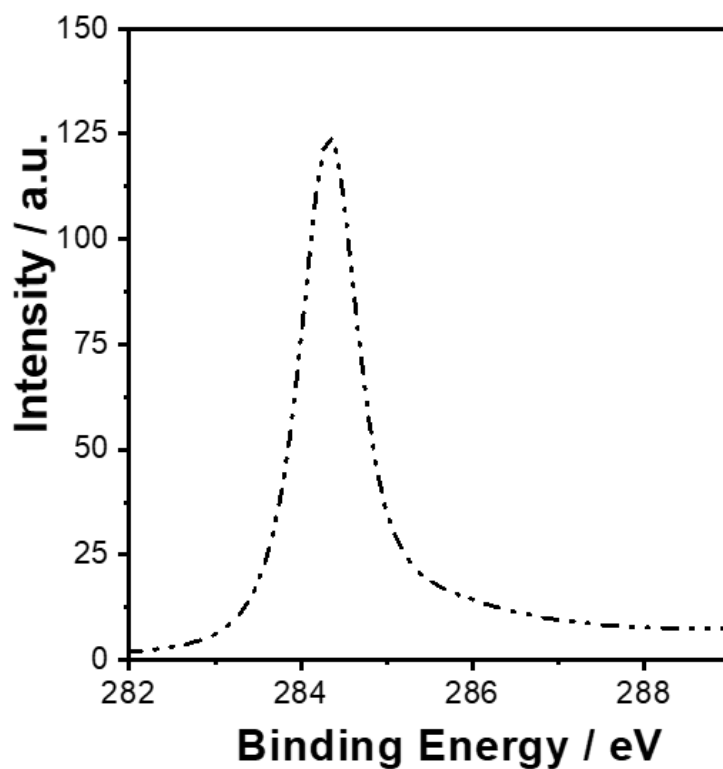


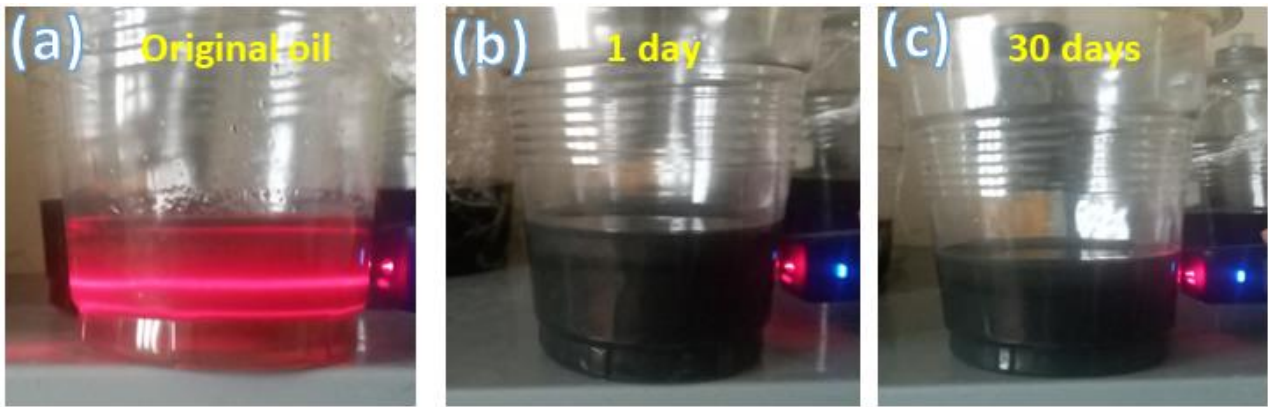
Figure S1. SEM images of prepared graphene nanoplatelets.



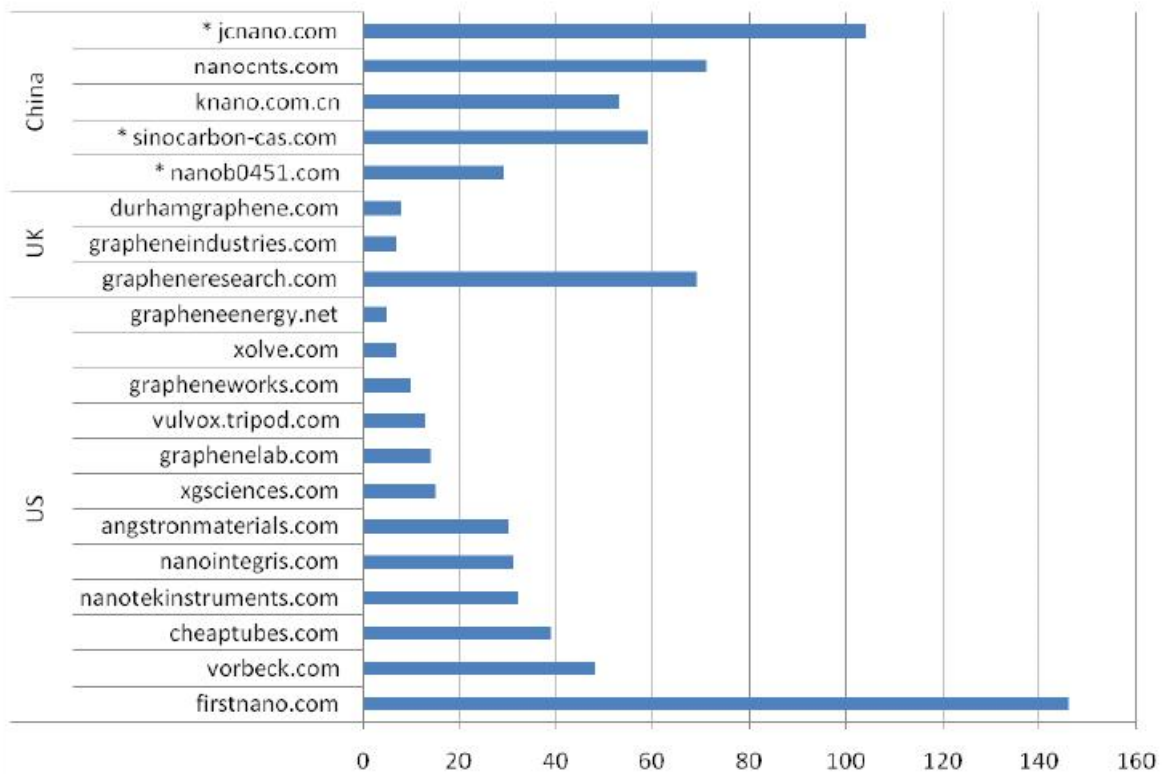
**Figure S2.** Topographic AFM image of graphene nanoplatelets and the height profile taken across the white line on the AFM image.



**Figure S3.** XPS spectrum of C 1s.



**Figure S4.** The Tyndall effect of lubricant oil with modified GNPs concentration of 0.01% after 1 day and 30 days.



**Figure S5.** The market price comparisons of graphene nanoplatelets from US, UK, and Chinese companies.