Supporting Information

Excellent microwave absorption properties based on the composite of one-dimensional Mo$_2$C@C nanorods and PVDF matrix

Chao-Qin Li, a Xun Shen, a Ruo-Cheng Ding, b Guang-Sheng Wang*b

a Engineering Research Center of High Performance Polymer and Molding Technology, Ministry of Education, Qingdao University of Science and Technology, Qingdao 266042, PR China
b School of Chemistry, Beihang University, Beijing 100191, PR China. E-mail: wanggsh@buaa.edu.cn

As shown in Figure S1, one can see that these Mo$_2$C@C composites display two weight loss regions due to the removal of physically absorbed water (before 100 °C) and final oxidation of product under high temperature air atmosphere (after 500 °C). It is calculated that the relative contents of Mo$_2$C and C in Mo$_2$C@C are 94.4 and 5.6 wt%, respectively.

![Figure S1](image)

**Figure S1.** TG curves of Mo2C@C nanorods under air atmosphere

As presented under the yellow line, the effective absorption frequency (RL less than -10 dB) almost covers the half of measured frequency with any filler content.
Figure S2. The RL curves of (a) 5 wt%, (b) 10 wt%, (c) 15 wt% Mo₃C@C/PVDF in the thickness of 2.0-5.0 mm.

Two Cole-Cole semicircles are stood out by blue lines as below.

Figure S3. The corresponding plots of $\varepsilon'$ versus $\varepsilon''$ for 10 wt% Mo₃C@C/PVDF.