Electronic supplementary information for

$Na_{0.5}Ce_{0.5}MoO_4$ as a new light absorption material to efficiently degrade RhB under visible light irradiation

Liming Yang, Fei Teng * Juan Xu, Yang Yang, Yandong Kan, Wenhao Gu

Jiangsu Engineering and Technology Research Center of Environmental Cleaning Materials (ECM), Jiangsu Key Laboratory of Atmospheric Environment Monitoring and Pollution Control (AEMPC), Jiangsu Joint Laboratory of Atmospheric Pollution Control (APC), Collaborative Innovation Center of Atmospheric Environment and Equipment Technology (AEET), School of Environmental Science and Engineering, Nanjing University of Information Science & Technology，219 Ningliu Road, Nanjing 210044, China

*Corresponding author. Tel./Fax.: +86-25-9882-1090; Email address: tfwd@163.com

Fig. S1

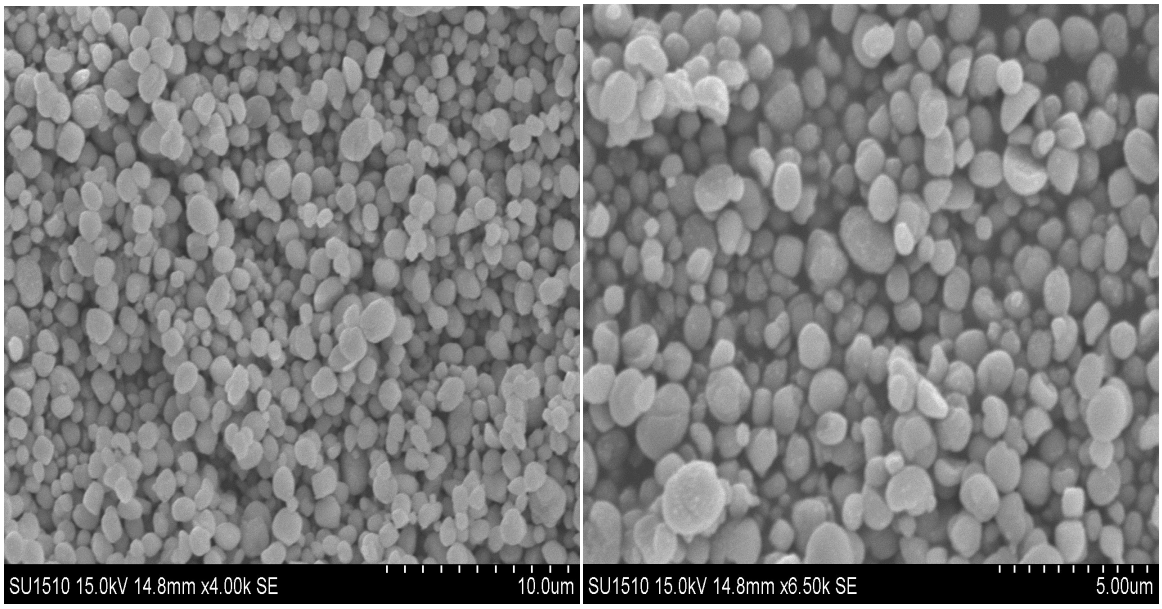

Fig. S1 Scanning electron microscopy (SEM) images of pure $Na_{0.5}Ce_{0.5}MoO_4$.

Fig. S2

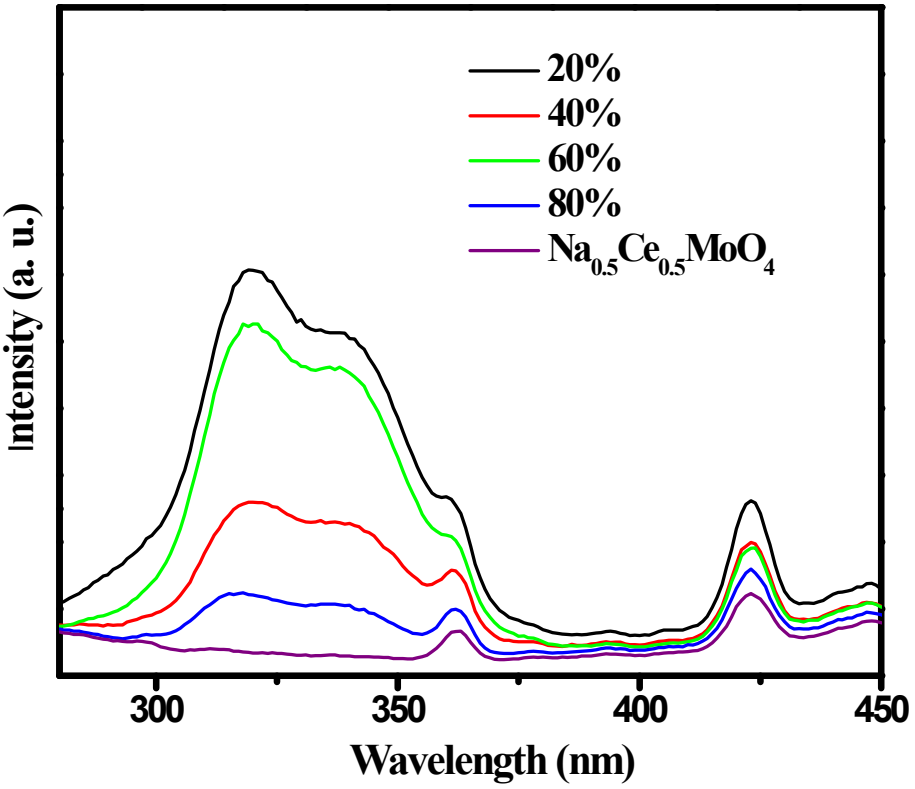

Fig. S2 Photoluminescence emission spectra (PL) of $Na_{0.5}Ce_{0.5}MoO_4$ and $x Na_{0.5}Ce_{0.5}MoO_4/MoO_3$ samples at excitation wavelength of 265nm, where x refers to the mass ratio of $Na_{0.5}Ce_{0.5}MoO_4$ to MoO_3(x = 20%, 40%, 60%, 80%).

Fig. S3

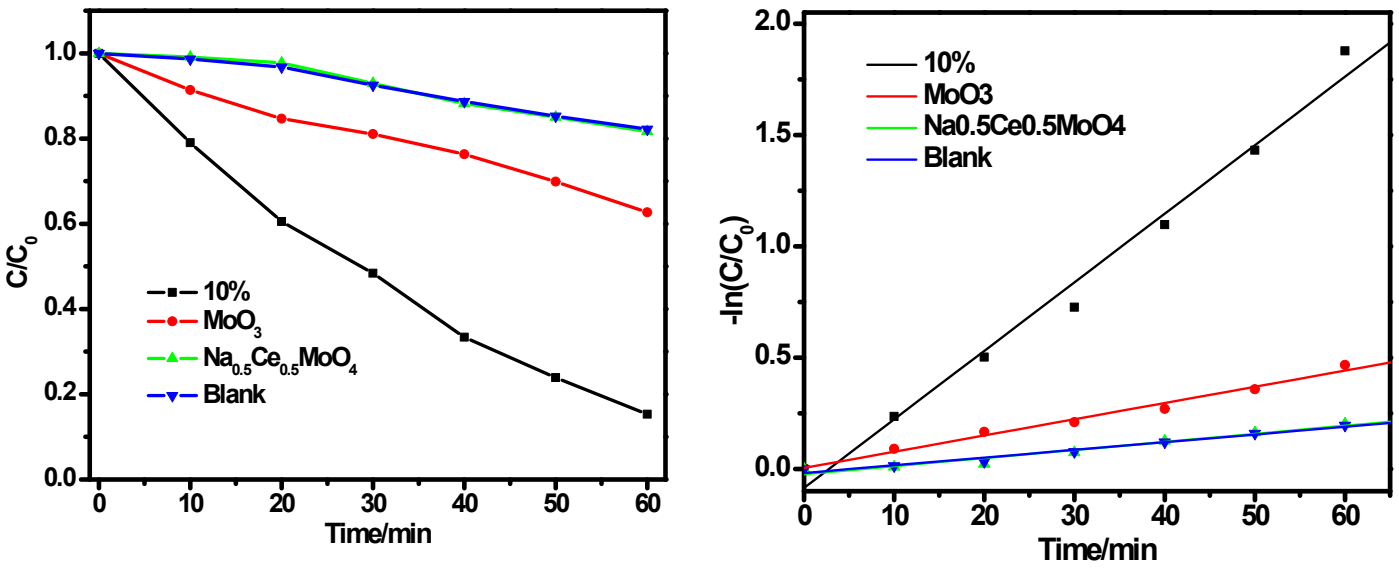

Fig. S3 (a) Photodegradation and (b) Kinetic curves of MB over MoO_3, $Na_{0.5}Ce_{0.5}MoO_4$ and 10% $Na_{0.5}Ce_{0.5}MoO_4/MoO_3$ samples under visible light irradiation ($\lambda \geq 420$ nm).

Fig. S4

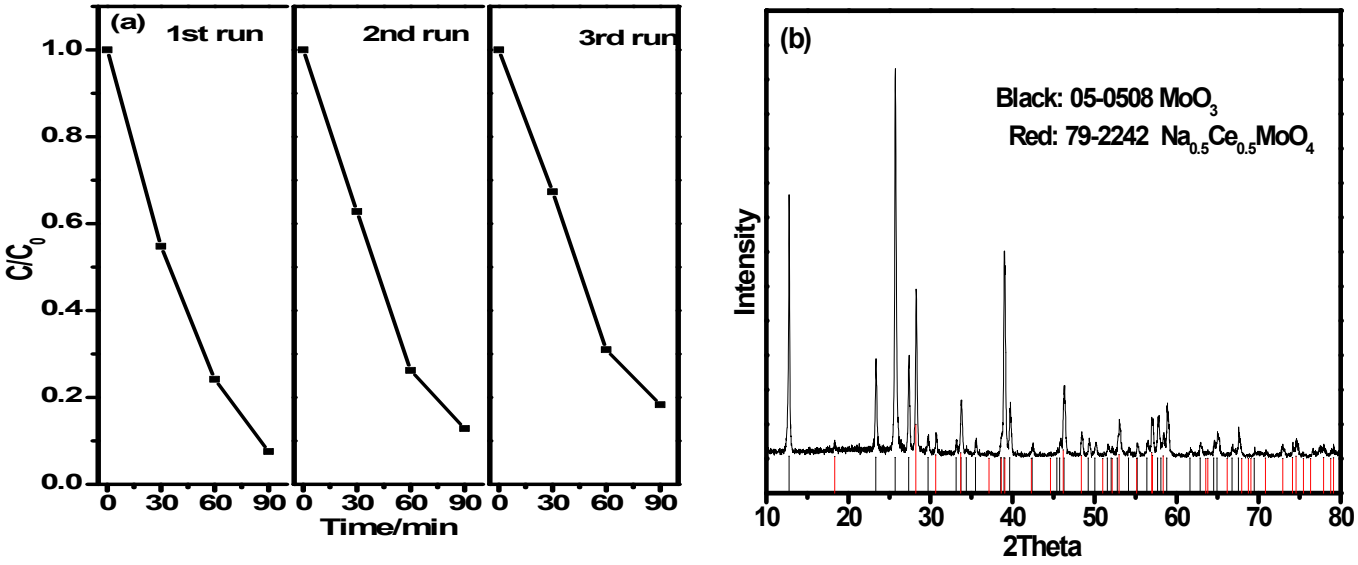

Fig. S4 (a) Cycle curves of 10% $Na_{0.5}Ce_{0.5}MoO_4/MoO_3$ under visible light irradiation ($\lambda \geq 420$ nm); (b) XRD pattern of the 10% $Na_{0.5}Ce_{0.5}MoO_4/MoO_3$ sample after three cycle runs.

Fig. S5

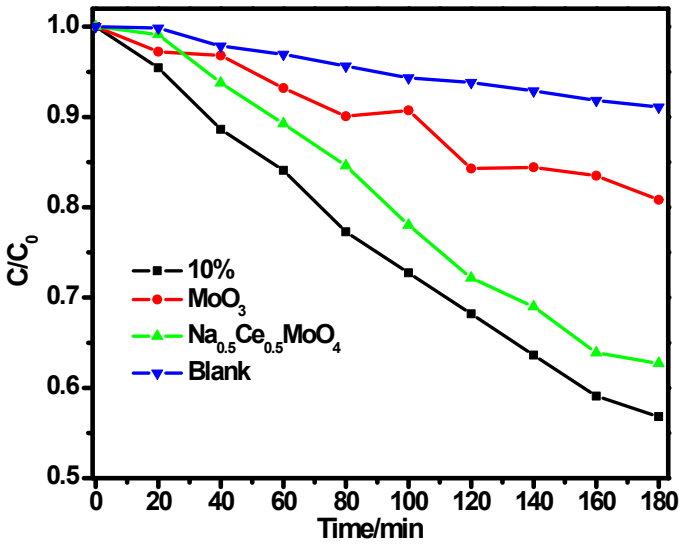

Fig. S5 Photodegradation of o-Nitrophenol over 10% Na0.5Ce0.5MoO4/MoO3, MoO3 and Na0.5Ce0.5MoO4 under visible light irradiation ($\lambda \geq 420$ nm).

Fig. S6

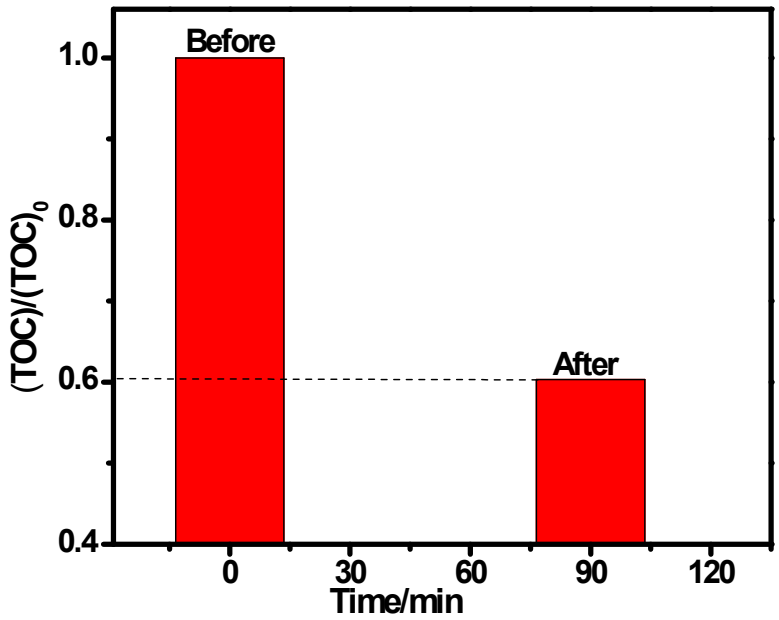

Fig. S6 Total organic carbon (TOC) changes of RhB solution before and after the degradation over 10% $Na_{0.5}Ce_{0.5}MoO_4/MoO_3$.