



Home / 2023 / September / Carbon black is not black carbon

GRU2025

14/09/2023 / Unit Komunikasi Penyelidikan & Visibiliti, PTNCPi





Congratulations

The recipients of
PETRONAS Research Grant (Hydrogen Programme)

Project entitled
Carbon Black Functionalization as Conductive Additives

Amount received : **RM 490,886.00**

Members:

Ts. Dr Muzakkir Mohammad Zainol
 (College of Engineering, UiTM Shah Alam) (Project Leader)

Prof. Ir Ts. Dr Syed Shatir A. Syed Hassan
 (College of Engineering, UiTM Shah Alam)

Assoc. Prof. Ir Ts. Dr Mohamad Hafiz Mamat
 (College of Engineering, UiTM Shah Alam)

Dr Ana Najwa Mustapa
 (College of Engineering, UiTM Shah Alam)

from
 Office of Deputy Vice-Chancellor (Research & Innovation)



<https://tncpi.uitm.edu.my/>



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Carbon black is nanostructured with carbon content >97% and exhibits nearly zero porosity. It possesses intrinsic characteristics; mainly conductive properties make it as excellent conductor of electricity. The carbon black conductive property is derived from their non-crystalline structure, which is similar to that of graphite.

In principle, the carbon black can be engineered to satisfy specific application requirements through structure modification and surface functionalization approach. Recent trend shows a tremendous interest in the carbon black applications for energy storage applications. The carbon black can be applied as conductive additives in battery electrodes, supercapacitors, and various electronic components. Its presence improves electrical conductivity and enhances the performances of these devices. Ultimately, it may contribute to more efficient energy storage and release, which is crucial for various modern electronic devices and renewable energy systems.

UiTM recently embarked on a project, fully funded by PETRONAS Research Sdn Bhd, for an 18-month evaluation of the potential of functionalized carbon black for energy storage-related applications. A lab-scale investigation will be conducted to characterize the carbon black materials and further enhance their electrical conductivity performance.

This highly potential project was remarkably inspired by the late Associate Professor Ir. Dr. Ahmad Rafizan Daud. The team members will endure the dedicated hard work and envisioned to the success of the project.

Congratulations, UiTM researchers!

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HUBUNGI KAMI

Universiti Teknologi MARA (UiTM)
40450 Shah Alam, Selangor Darul
Ehsan
Malaysia

Tel: +603-5544 2051 / 2000

