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UNIVERSITI
TEKNOLOGI
MARA

Cawangan Negeri Sembilan
Kampus Seremban

BULETIN FAKULTI PERAKAUNAN

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Polymer As Banknotes

by Norhidayah Ismail

Each country has its currency that represents the country. Some countries use the same currency for their daily monetary transactions. For instance, Malaysia uses the Ringgit Malaysia (RM) for its monetary transactions. Ringgit Malaysia comes in the form of paper banknotes and coins. Since 2004, Bank Negara Malaysia has replaced the RM5 paper banknotes with RM5 polymer banknotes in circulation. The design, colour, and size remained the same as the old RM5 paper banknotes, but enhanced security features were added to the new polymer banknotes.



Security features remained from paper banknotes	Security features added to polymer banknotes
The see-through feature is a stylized hibiscus, which is perfectly registered on the front and back of the banknotes when held against the light.	A clear window with a shadow image of the Prime Minister's Office in Putrajaya and an embossed printing of the numeral "5" can be seen from either side of the banknote.
The micro lettering of "RM5" can be viewed under a magnifying glass.	The Bank Negara Malaysia logo, the Kijang, is printed in white on both sides of the note.
The first Seri Paduka Baginda Yang DiPertuan Agong portrait was intaglio printed with a unique multi-layered ink.	The Kijang Logo will be visible through a non-transparent window on the back of the banknote.

The announcement of introducing the new RM5 polymer banknotes does not limit the validity of the existing RM5 paper banknotes. The old paper banknotes can still be used in the markets and allow for legal transactions until they are fully withdrawn.



RM5 paper banknote



RM5 polymer banknote

Polymer refers to a synthetic substance that comprises multiple simpler chemical units called monomers and becomes a large molecule called a macromolecule (Britannica, 2019). The material used in producing the polymer banknotes makes them more durable, non-absorbent, more resistant to dirt and liquid, and not easily torn; therefore, the lifespan of the banknotes is expected to last longer.

These are the advantages of using a polymer as the banknote:

- The banknotes are water-resistant and resistant to any other liquid.
- It is made from a non-fiber compound, which makes it more durable even after being folded many times.
- It is not easily torn, but once damaged, it easily tears even worse.
- It is more hygiene-friendly and dirt-resistant since bacteria do not easily spread on it.
- It is difficult, time-consuming, and expensive to counterfeit polymer banknotes.



According to Rafiei, Karimi, & Bodaghi (2023), polymer banknotes have consistently more excellent thermal treatment resistance than paper banknotes, especially at high temperatures. They also agree that polymer banknotes have a very high factor in combating banknote counterfeiting due to the structure of composite materials and nanoparticles in their fiber network. Furthermore, utilizing polymer banknotes instead of paper banknotes could be a practical approach to aiding the economy and the environment and introducing more significant usage of green energy globally.

References

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