

Press Release

New Study Documents Dramatic Reduction in Carbon Footprint When Comparing Flexographic Printing to Gravure

The Beijing Institute of Graphic Communication (BIGC) conducted an independent study comparing the carbon footprint of flexographic printing with that of gravure printing

Tokyo, Japan & Brussels, Belgium, November 12, 2024. Asahi Photoproducts, a pioneer in flexographic photopolymer plate development, a subsidiary of Asahi Kasei, today reported with the Beijing Institute of Graphic Communication (BIGC), an independent body, carried out a study to better understand the differences in carbon footprint between gravure printing using solvent ink, and flexographic printing using water, solvent, and UV inks. BIGC is the only undergraduate university in Asia that focuses on printing, publishing and media, and is a pioneer in publishing and printing higher education in China. The independent study was conducted between 1 October and 4 December 2023 under the supervision of Lixin Mo, Professor, Doctor, teacher at the School of Printing and Packaging Engineering, BIGC, and Director of the Beijing Printed Electronics Engineering Technology Research Center. The full report will be available in January 2025.

“Flexographic printing provides numerous advantages, including a more environmentally friendly approach compared to other printing technologies, compatibility with a wide range of substrates, the ability to facilitate high-speed mass production, and flexibility in combining different printing methods,” Dr. Mo explained. “These benefits have led to its widespread use in the packaging printing markets of Europe and the United States. According to statistics, flexographic products account for over 70% of the packaging printing market in the United States and approximately 50% in European countries. However, in China’s packaging printing market, gravure printing has dominated, occupying more than 90% of the market share.”

With that in mind, BIGC conducted a survey and on-site research to investigate the current development status of flexographic and gravure printing enterprises in China’s packaging printing industry. This study aimed to analyze the comparative advantages, existing shortcomings, and development potential of flexographic printing technology, including their sustainability aspects.

The Results

The study concluded that there are significant sustainability benefits for printing and packaging companies in China to switch from gravure to flexography, or at a minimum, begin to introduce flexography into their operations.

“The most significant sustainability advantage,” Dr. Mo added, “came in the comparison of flexography using water-wash plates and water-based inks. We found emissions to be less



than 4 CO₂eq/m² for this configuration, compared to as much as a stunning 140 kg-CO₂eq/m² for gravure using solvent inks, a reduction of 136 kg-CO₂eq/m², or 35 times less emissions. While results from all sites were not this exaggerated, the best-case scenario for gravure resulted in emissions of 34 kg-CO₂eq/m² for gravure.”

The professor noted that even when using solvent inks, gravure emitted more than three times as much CO₂eq/m², test results achieved at one site where both technologies were in place.


“Based on our long experience in the packaging print industry in China, we realized that people in the industry have been waiting for a game changer in the market,” said Asahi’s Technical Support Professional Yuji Suzuki. “This neutral study from BICG clearly demonstrates that that game changer is here, and it is the fact data comparison study of a life cycle assessment (LCA) comparing flexography to gravure in China packaging printing industry. Government regulation has the highest power in China, and we expect to see strict regulations about CO₂ emissions imposed in the coming months. This study has the potential to accelerate implementation of those regulations. Both brand owners and converters should be thinking now about investment in flexography, even if it is costly. The risk of running afoul of these coming regulations is too high.”

For more information about products and services from Asahi Photoproducts, visit us at www.asahi-photoproducts.com.

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About Asahi Photoproducts

Founded in 1973, Asahi Photoproducts is a subsidiary of Asahi Kasei Corp., which has a century of operating history. Asahi Photoproducts is a leading pioneer in the development of photopolymer flexo printing plates. By creating high-quality flexographic solutions through continued innovation, the company aims to drive printing forward in harmony with the environment. Follow Asahi

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More information is available at www.asahi-photoproducts.com.

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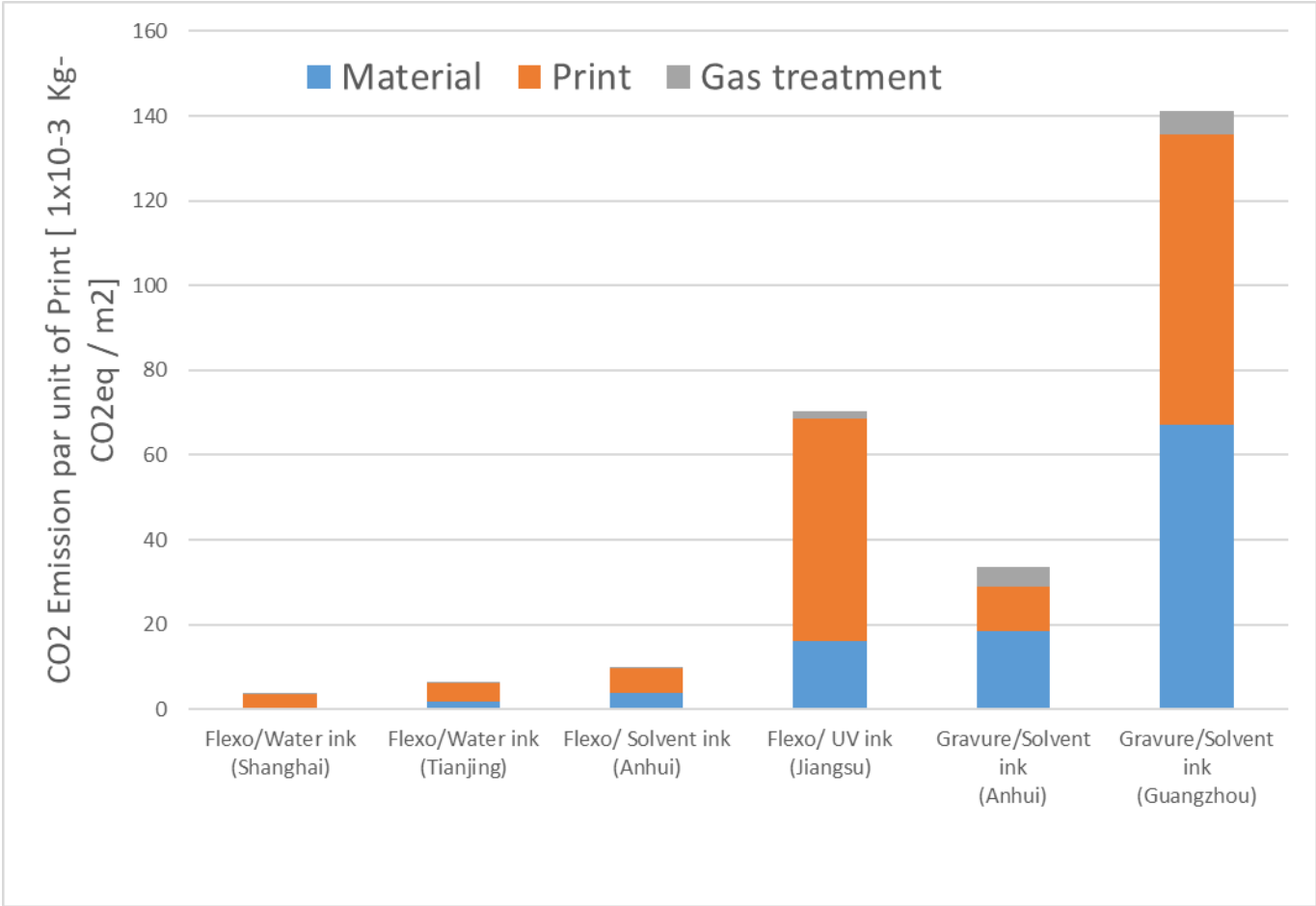
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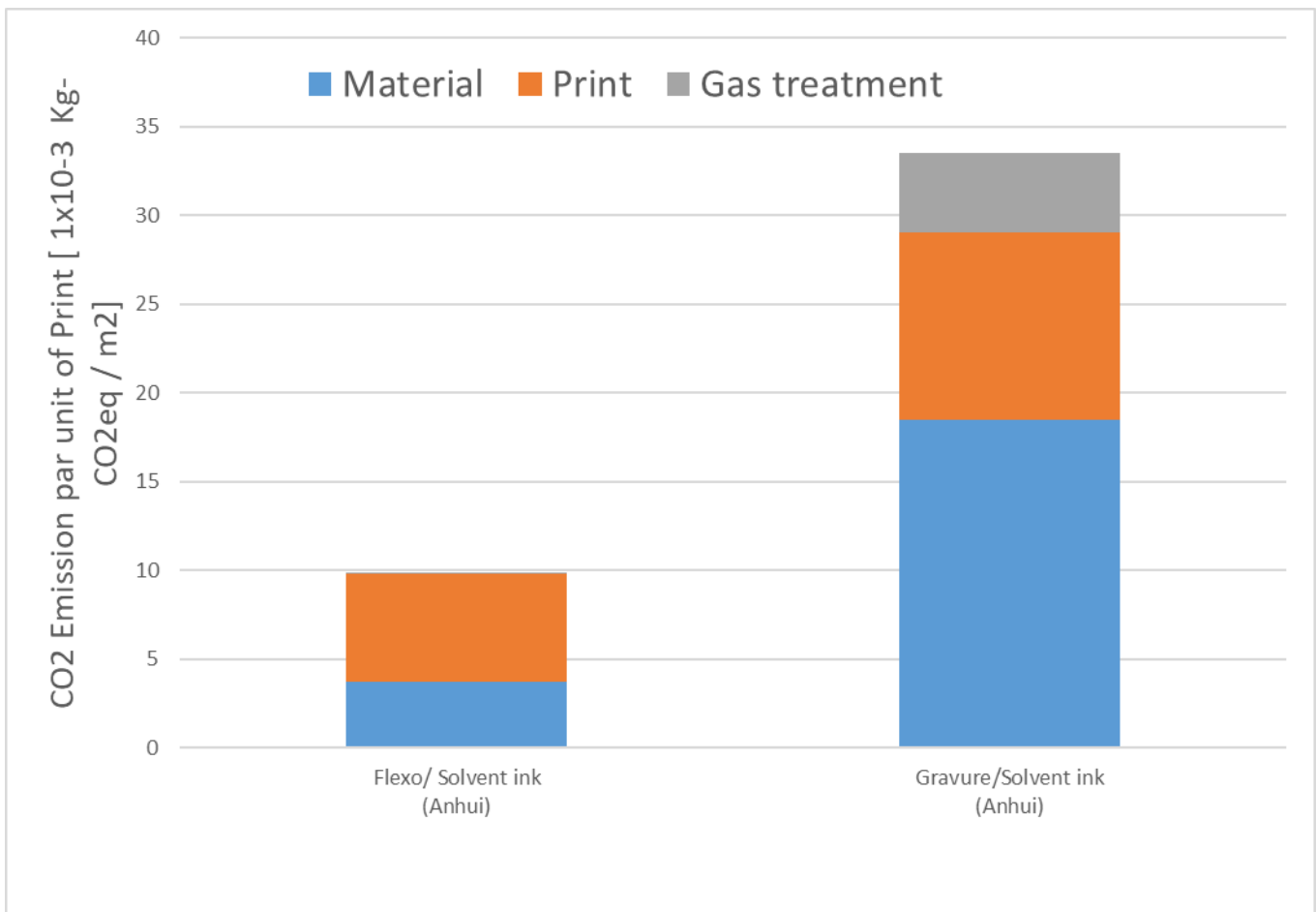
Images & captions:



Dr. Mo Lixin



Study results showing the carbon footprint of gravure compared to three different flexographic configurations



A printer located in Anhui used both gravure and flexography printing technologies with solvent inks. An LCA (life cycle assessment) was conducted to compare the carbon footprints of these two printing methods when producing the same products. The comparison analyzed the environmental impact of the solvent-based gravure and flexography processes within a single printer facility.