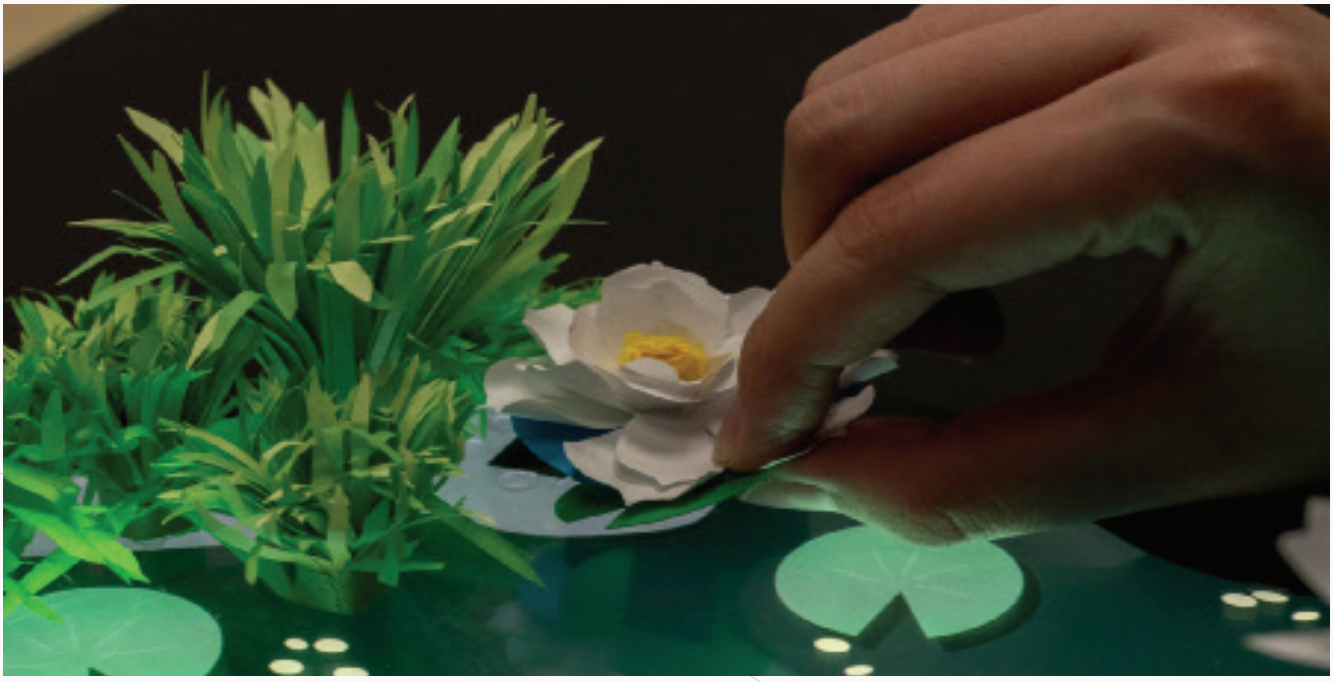
IJDesign

Special Issue on

Crafting Tangible Bits through Interactive Paper

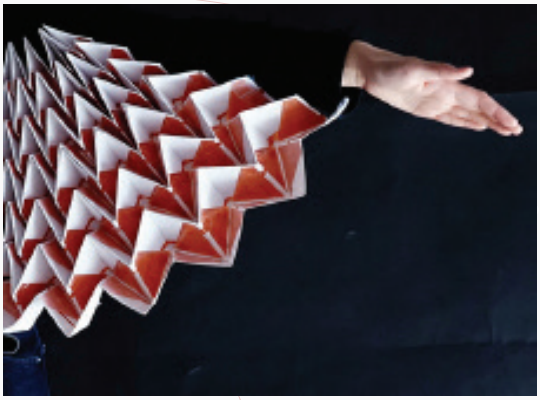
Full Paper Due: 22 Oct 2026



Call for Papers

Thirty years after the debut of Tangible Bits, the philosophy of seamless interfaces between people and digital information is finding great vitality and renewed expression in the tactile, accessible medium of interactive paper. This special issue, “Crafting Tangible Bits through Interactive Paper,” explores the convergence of traditional craftsmanship and digital computation, focusing on the evolution of paper as a substrate and paradigm toward realizing a sustainable, accessible, interactive computational medium.

Beyond its tactile familiarity and rich ecology of embodying artifacts and ecosystems, paper offers a powerful medium for engaging the mounting e-waste crisis. The accessibility and potential for low-cost fabrication also highlight the democratization of technology. By embedding interactivity and intelligence into cellulose-based substrates through conductive inks, fiducial markers, standard printing processes, and paper-folding techniques, sophisticated electronics are moved out of the lab and into the hands of a broader creative community. What emerges is a new class of hybrid artifacts, from low-cost design prototyping to interactive educational tools, forming a future of tangible interfaces that is both broadly inclusive and ecologically responsible.



Schedule

- **Full Paper Due:** **22 Oct 2026**
- Notification of Review Results: 10 January 2027
- Final Version of Paper Due: 10 February 2027
- Notification of Acceptance: 10 March 2027
- Special Issue Publication Date: 30 April 2027

Special Issue Editors

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Suggested Research Themes

We invite original research, case studies, and perspectives that reflect on three decades of Tangible Bits by pushing the boundaries of what "paper" can be. We welcome submissions on all types of flexible, thin, and foldable surfaces, categorized under the following pillars:

- **Material Evolution: From Cellulose to Synthetic Membranes**. How can we extend and evolve the 30-year legacy of Tangible Bits by moving from traditional paper to synthetic membranes and films? We seek inquiries into materials that mirror paper's affordances while introducing novel properties such as transparency, extreme durability, or edibility. How do these new "paper-like" substrates enhance the sensory and functional vocabulary of tangible interaction?
- **Embodied Interaction: Biocompatibility and Paper-like Sheets**. In what ways can biocompatible composites and paper-like materials be redefined as "interactive paper" to engage the human body? We encourage submissions that explore how these soft, flexible materials redefine the physical relationship between users and their environment, moving toward the seamless integration of digital information into the very fabric of daily life.
- **Democratized Craft: Toolkits and Design Education**. How can the inherent accessibility of paper facilitate a more inclusive future for interaction design? This theme focuses on the transition of electronics from "cleanrooms to classrooms." We invite reflections on low-cost fabrication toolkits, the role of craft in design education, and the practical challenges of embedding interactivity into 3D physical forms in low-resource settings.
- **Sustainable Futures: Responding to the E-Waste Crisis**. As we look toward the next 30 years, how can interactive paper serve as a renewable and sustainable foundation for tangible interaction design? We seek research exploring the lifecycle of interactive artifacts, focusing on biodegradability, recyclability, and the use of responsible physical materials as alternatives to traditional electronic waste.

Submission of Papers:

Manuscripts should be prepared with either

- The IJDesign Manuscript Template for Microsoft Word, or
- The Association for Computing Machinery (ACM) - SIG Proceedings Template using \documentclass[manuscript,review,anonymous]{acmart} for the LaTeX template (the LaTeX template is also available in Overleaf).

Please note that the submission is in single-column format, although final papers will be produced in double-column format. If the submission is accepted, authors should prepare their camera-ready paper with the IJDesign Manuscript Template (Word Template) for the publication workflow within one week after receiving the notification.

Submitted papers should be between 5,000 and 10,000 words in length, and should not have been previously published nor be currently under consideration for publication elsewhere. A double-blind review process will be employed for this special issue. While making a submission, authors should choose "*Special Issue on Crafting Tangible Bits through Interactive Paper*" as the Journal Section.

Suggested Readings

- Ishii, H., & Ullmer, B. (1997). Tangible bits: Towards seamless interfaces between people, bits and atoms. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 234-241). ACM. https://doi.org/10.1145/258549.258715
- Cheng, T., Zhang, Z., Zong, B., Zhao, Y., Chang, Z., Kim, Y., Zheng, C., Abowd, G. D., & Oh, H. (2023). SwellSense: Creating 2.5D interactions with micro-capsule paper. In *Proceedings of the SIGCHI conference on human factors in computing systems* (Article 424). ACM. https://doi.org/10.1145/3544548.3581125
- Hodges, S., Villar, N., Chen, N., Chugh, T., Qi, J., Nowacka, D., & Kawahara, Y. (2014). Circuit stickers: Peel-and-stick construction of interactive electronic prototypes. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1743-1746). ACM. https://doi.org/10.1145/2556288.2557150
- Liang, R.-H., Shen, C., Chan, Y.-C., Chou, G.-T., Chan, L., Yang, D.-N., Chen, M. Y., & Chen, B.-Y. (2015). WonderLens: Optical lenses and mirrors for tangible interactions on printed paper. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1281-1284). ACM. https://doi.org/10.1145/2702123.2702434
- Oh, H., Kim, J., Morales, C., Gross, M., Eisenberg, M., & His, S. (2017). FoldMecha: Exploratory design and engineering of mechanical papercraft. In *Proceedings of the 11th international conference on tangible, embedded, and embodied interaction* (pp. 131-139). ACM. https://doi.org/10.1145/3024969.3024991
- Qi, J., & Buechley, L. (2014). Sketching in circuits: Designing and building electronics on paper. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1713-1722). ACM. https://doi.org/10.1145/2556288.2557391
- Ullmer, B., Ishii, H., & Jacob, R. J. K. (2005). Token+constraint systems for tangible interaction with digital information. *ACM Trans. Comput.-Hum. Interact, 12*(1), 81-118. https://doi.org/10.1145/1057237.1057242
- Ye, Q., Teng, S., Siew, E. I., Yen, C. C., & Zheng, C. (2025). Crafting interactive paper composites through ancient papermaking techniques. In *Proceedings of the SIGCHI conference on human factors in computing systems* (Article 445). ACM. https://doi.org/10.1145/3706598.3714152
- Zheng, C., Oh, H., Devendorf, L., & Do, E. Y.-L. (2019). Sensing kirigami. In *Proceedings of the conference on designing interactive systems* (pp. 921-934). ACM. https://doi.org/10.1145/3322276.3323689