

Aim and Objective

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Aim & Objectives and Research area

iHydra smart water bottle is a modern and practical device designed to help people maintain good hydration habits [1] throughout the day and good for the environment [2]. Unlike a regular water bottle, it uses built-in technology to support users in tracking and improving how much water they drink. iHydra bottles include sensors that measure water intake and can connect to a smartphone app using Bluetooth. This allows users to monitor their daily hydration levels and set personal goals based on their needs.

iHydra provides smart reminders to encourage regular drinking. These reminders may come in the form of LED lights on the bottle or notifications sent to a phone, which is particularly helpful for students or busy individuals who may forget to drink water. iHydra models also include a digital temperature display on the lid allowing users to quickly check whether their drink is hot or cold without opening it.

Another useful feature found in some versions is UV-C [3] self-cleaning technology. This feature helps kill bacteria inside the bottle, making it safer and more hygienic for everyday use [4]. The bottle is usually made from stainless steel and is insulated meaning it can keep drinks cold for up to 24 hours or hot for several hours. Overall, as a student iHydra smart water bottle is a helpful and innovative product. It combines technology with convenience making it easier to stay hydrated and maintain a healthy lifestyle.

References

- [1] R. Tommy, V. Raja V., and A. S. Krishna, "Interactive Water Bottle Application on a Smart Phone to Enhance User Water Consumption," in 2017 International Conference on Current Trends in Computer, Electrical, Electronics and Communication (CTCEEC), IEEE, Sept. 2017, pp. 1072–1073. doi: 10.1109/CTCEEC.2017.8455048.
- [2] E. Ö. Öner, M. Kök, M. E. Pekdemir, E. Aydoğmuş, S. Saydam, and Y. Aydoğdu, "Production of smart polymer blend filament from waste PET obtained water bottles: investigation of thermal and shape memory behavior," *Macromolecular research*, vol. 32, no. 12, pp. 1267–1274, Dec. 2024, doi: 10.1007/s13233-024-00303-4.
- [3] M. A. Würtele et al., "Application of GaN-based ultraviolet-C light emitting diodes – UV LEDs – for water disinfection," *Water research (Oxford)*, vol. 45, no. 3, pp. 1481–1489, Jan. 2011, doi: 10.1016/j.watres.2010.11.015.
- [4] W.-Y. Ouyang, W.-L. Wang, Y.-L. Zhang, H.-Y. Cai, and Q.-Y. Wu, "VUV/UV oxidation performance for the elimination of recalcitrant aldehydes in water and its variation along the light-path," *Water research (Oxford)*, vol. 228, no. Pt A, Art. no. 119390, Jan. 2023, doi: 10.1016/j.watres.2022.119390.

Search Tools

Boolean Operators

- AND – Finds results containing both keywords.
- Smart Water Bottle AND Hydration Tracking
- IoT AND Smart Bottle
- OR – Finds results containing either keyword.
- Smart Water Bottle OR Hydration Monitor
- Wearable Device OR Smart Bottle
- NOT – Excludes unwanted keywords.
- Smart Water Bottle NOT Sports
- Hydration Tracking NOT Fitness Band

- Quotation Marks (" ") – Searches for an exact phrase.
- “Smart Water Bottle”
- “Hydration Reminder System”

These search techniques can be used in Google Scholar, IEEE Xplore, and the ACM Digital Library to find relevant academic sources for your research.

Research Database

Google Scholar – Academic articles, journals, theses, and conference papers.

The screenshot shows the Google Scholar search results for the query "Smart water bottles". The search bar at the top contains the text "Smart water bottles" and a magnifying glass icon. Below the search bar, the text "Articles" and "About 220,000 results (0.11 sec)" are displayed. On the right side, there are links for "My profile" and "My library".

The search results are listed in a table-like format. The first result is titled "SmartStuff: A case study of a smart water bottle" by E Jovanov, VR Nallathimmareddygari, et al. It is from the 2016 38th annual ... conference, 2016, published in IEEE Xplore. The result includes a link to the PDF on researchgate.net. The second result is titled "Monitoring fluid intake by commercially available smart water bottles" by R Cohen, G Fernie, A Roshan Fekr, published in Scientific Reports, 2022, from Nature. The third result is titled "[PDF] A smart water bottle for new seniors: Internet of Things (IoT) and health care services" by NE Lee, TH Lee, DH Seo, SY Kim, published in the Journal of Bio-Science and Bio, 2015, from gypress.com. The fourth result is titled "Hydration reminding smart bottle: IoT experimentation" by PB Pankajavalli, R Saikumar, et al., published in Innovations in ..., 2017, from IEEE Xplore.

On the left side of the search results, there are filters for "Any time", "Sort by relevance", "Any type", and "Review articles". There are also checkboxes for "include patents" and "include citations", and a "Create alert" button.

At the bottom of the search results, there is a link to "Search deeper on Scholar Labs".

Figure 5 Google Scholar

IEEE Xplore – Engineering, technology, and smart device research publications.

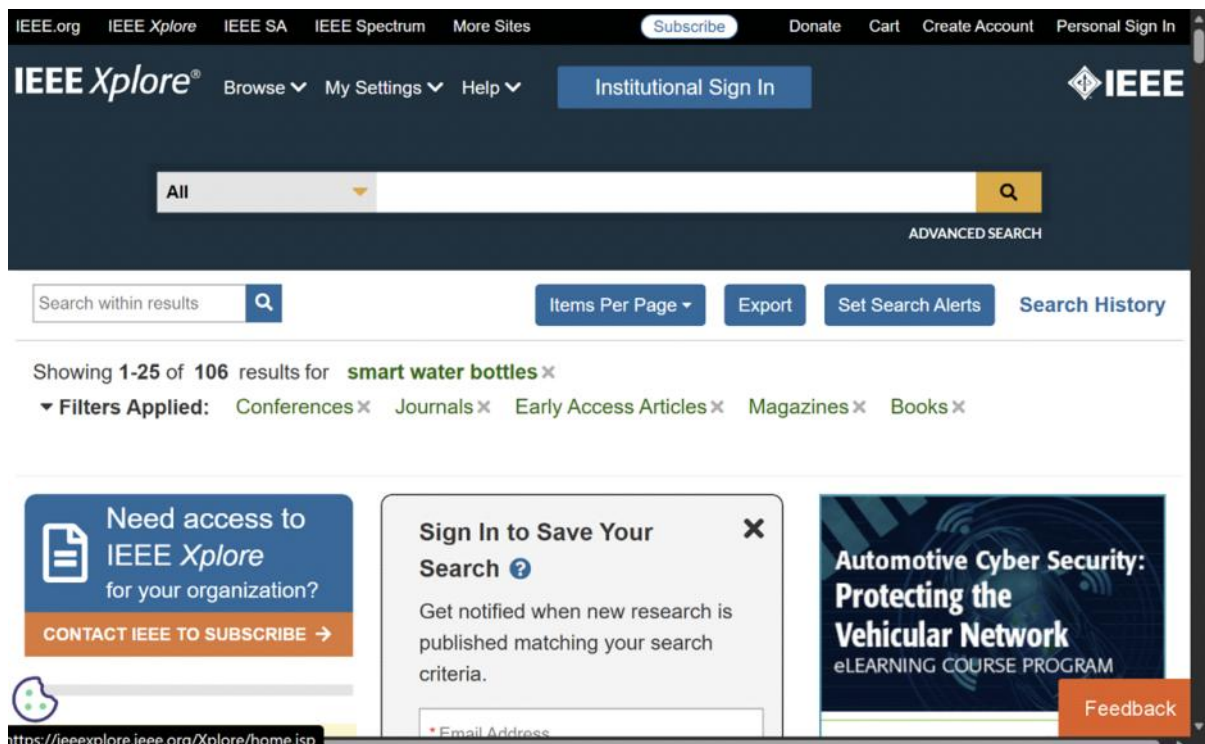


Figure 7 IEEE Xplore

ACM Digital Library – Computing, software, and information technology research resources.

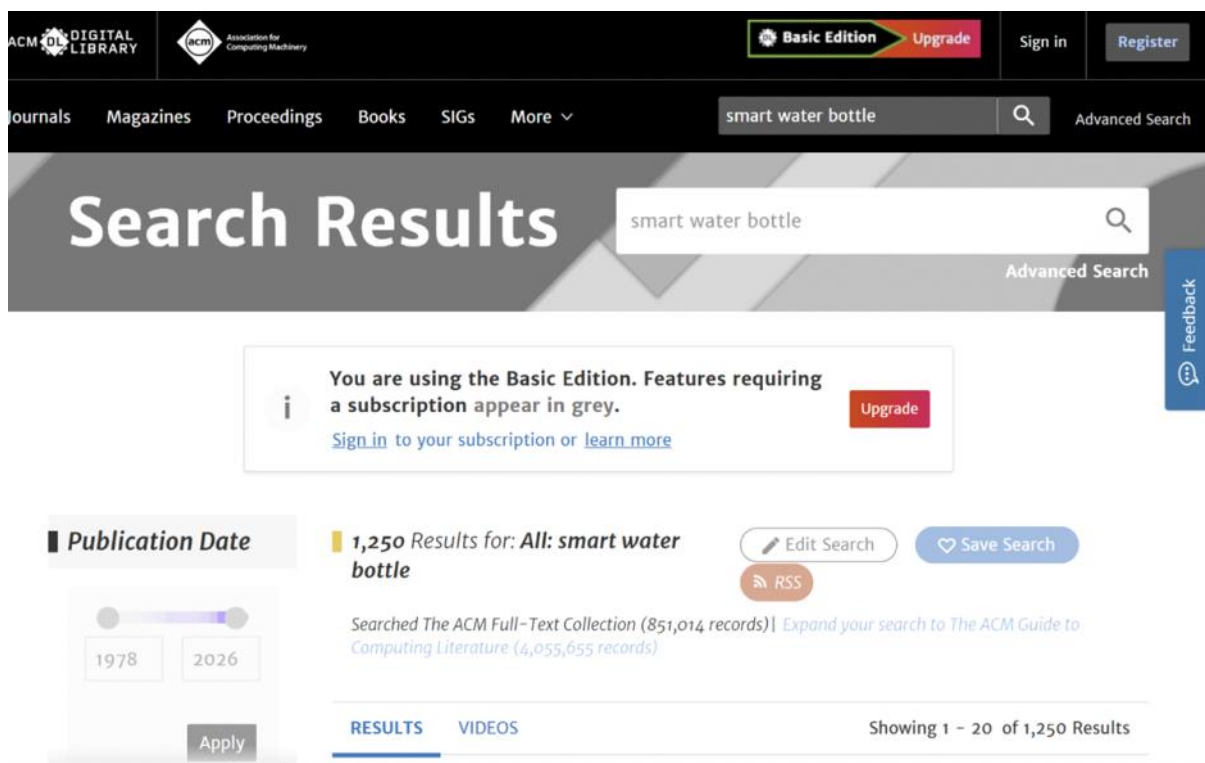


Figure 8 ACM Digital Library