

Best of Last Week—Neanderthals distilling birch tar, detecting bots posing as humans, slower intelligent brains

June 5 2023, by Bob Yirka

Königsauere birch tar and experimental production techniques. a KBP1, Königsauere 1 (left); KBP2, Königsauere 2 (right). b Drawing of the condensation method; c cobble-groove condensation method; d the bark roll buried technique; e the pit roll technique; f raised structure. 1, birch bark; 2, birch tar. Explanations in the main text but also see supplementary information. Credit: Archaeological and Anthropological Sciences (2023). DOI: 10.1007/s12520-023-01789-2

It was a good week for historical research as a team of archaeologists at the University of Tübingen, working with a colleague from the State Museum of Prehistory and another from Strasbourg University, found evidence showing that [Neanderthals manufactured a synthetic material using an underground distillation technique](#) to create birch tar—a sticky material used to hold tool parts together. Also, a team with the International Thwaites Glacier Collaboration found a surprise in the rocks beneath the Antarctic ice sheet—[evidence of glaciers in the area regrowing following an earlier shrinkage](#). And a pair of archaeologists, one with the University of Johannesburg, the other the University of Lund, found evidence that [Neanderthal and human fire-making methods had different origins](#), though they also found evidence of shared intelligence.

In technology news, a combined team of IT researchers from the University of California, Santa Barbara, and China's Xi'an Jiaotong University devised [a model to help detect bots posing as humans](#)—called Finding Large Language Model Authenticity via a Single Inquiry Response (FLAIR), the system uses simple questions that humans can answer but bots can't. And a team of engineers at Hong Kong Polytechnic University achieved [a record 19.31% efficiency with organic solar cells](#). Also, a team of engineers from Technische Universität Ilmenau, Kiel University, University College Cork, Karlsruher Institute of Technology and Fraunhofer Institute for Digital Media Technology Ilmenau, developed [an adaptive artificial cochlea that could enhance the performance of hearing aids](#). And a team with members from Xi'an Jiaotong University, the University of Hong Kong and Xi'an University of Science and Technology developed [an organic electrochemical transistor that can also serve as a sensor and processor](#).

In other news, a team of biomedical engineers at North Carolina State University found that [a chemical in a common sweetener damages DNA](#)—sucralose, found in Splenda, was found to be genotoxic. Also a team at

the University of California, San Francisco, found evidence in secret industry documents that the [makers of PFAS "forever chemicals" covered up their health dangers](#). And finally, a combined team from BIH and Charité—Universitätsmedizin Berlin found that [intelligent brains take longer to solve difficult problems](#) because they do not jump to conclusions.

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