Best of Last Week—Evidence of quantum superchemistry, hacking Zoom, Vlad the Impaler's bleeding tears

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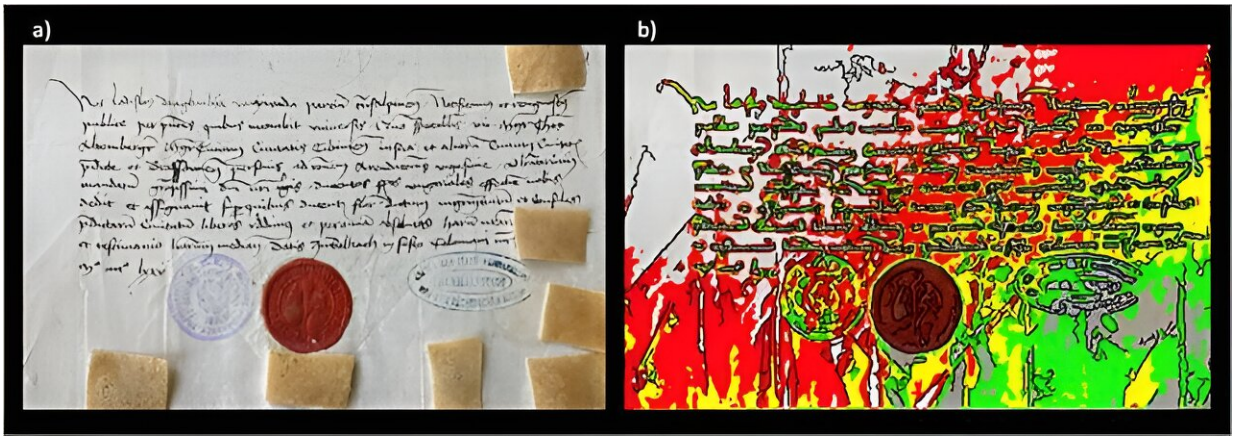

(a) First letter written by Count Vlad Drăculea (archive catalog number is II 365), dated August 4, 1475, here investigated, also showing the positions of the EVA strips (brownish rectangles) applied to its surface for capturing biological material; (b) mapping of the fluorescence of phenylalanine, tyrosine, and tryptophan under flash UV illumination. Credit: *Analytical Chemistry* (2023). DOI: 10.1021/acs.analchem.3c01461

It was a good week for physics research as an international team of physicists confirmed a 67-year-old prediction that electrons in a solid state can mix to create a composite particle that is neutral, massless and does not interfere with light. And a team at the University of Chicago observed the first evidence of "quantum superchemistry," in which

particles that are in the same quantum state undergo collective accelerated reactions. The observation of the effect, which had been predicted but not observed, is expected to open a new field of physics.

In technology news, a trio of computer scientists at Durham University discovered that hackers can decipher keystrokes during Zoom calls by feeding recorded keystroke sounds to an algorithm. And a team at Skolkovo Institute of Science and Technology demonstrated a novel motion-capture system with a robotic marker that could enhance human-robot interactions. Also, a combined team from Westlake University and Zhejiang University demonstrated an origami-inspired, universally deformable module for robotics applications. And a team with members from City University of Hong Kong, Northwestern University, and several institutions in the U.S. developed a new cathode that could increase the capacity of LiBs.

In other news, Dr. Manoj Sivan at the University of Leeds published a paper in *The Lancet* documenting a case of a patient with long COVID who developed what he and his team describe as "blue legs" due to acrocyanosis, venous pooling of blood in the legs. A team with members from the University of Birmingham and the NASA Glenn Research Center found concentrations of potentially harmful chemical compounds in dust collected from air filtration systems on the International Space Station. Another team found that walking at least 4,000 steps every day can bring major health benefits, such as a lower risk of dying from any cause. And finally, a team of chemical scientists from the University of Catania, SpringStyle Tech Design Ltd, Romania National Archives and Politecnico di Milano, Via Mancinelli, found in testing Vlad the Impaler's letters that he may have had a condition causing his tears to be mixed with blood.