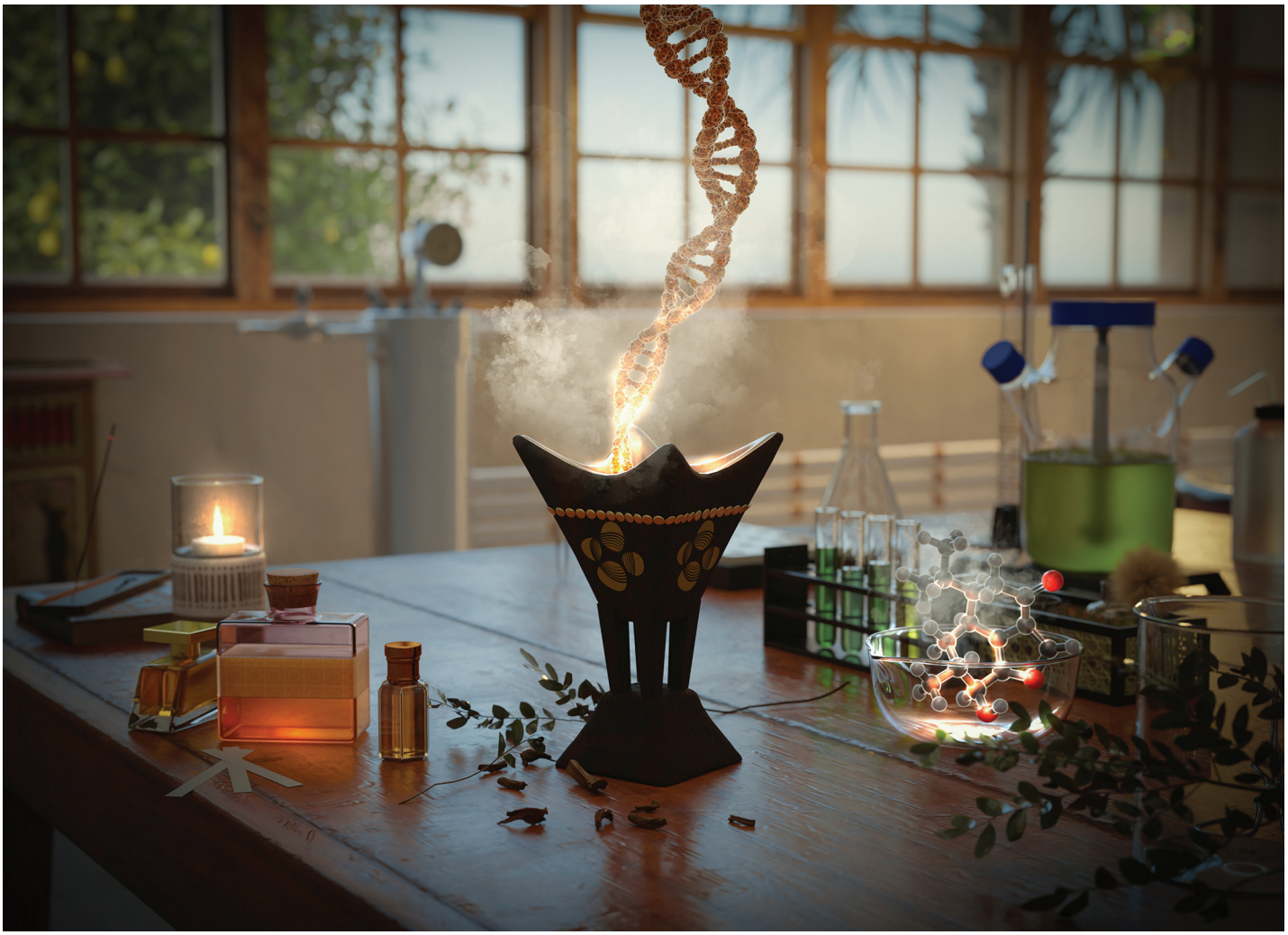

Showcasing research from Professor Kyle J. Lauersen's laboratory, Bioengineering program, King Abdullah University of Science and Technology, Thuwal, Kingdom of Saudi Arabia.

A synthetic biology and green bioprocess approach to recreate agarwood sesquiterpenoid mixtures

Agarwood trees are used as incense and perfumes because of their fragrant oxygenated terpenes. Increasing consumer demand is endangering these trees. This work characterizes agarwood chemical diversity, uses synthetic biology to metabolically engineer green algae to produce terpenes and presents a green bioprocess to generate diverse oxy-functionalized sesquiterpene mixtures like those from agarwood, but using CO_2 as an input. The process could be a sustainable source of fragrances and relieve some pressure on the endangered plants.

Illustrator credit: Science Brush. Hassan A. Tahini hassan@sciencebrush.design

As featured in:

See Kyle J. Lauersen *et al.*, *Green Chem.*, 2024, **26**, 2577.

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