Catalyst metal recovery adds greener notes to whisky production

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Researchers have recently discovered a new way to remove the copper that also allows it to be recycled. The copper is absorbed onto magnetite nanoparticles which can then be separated out using a magnet. The copper is then recovered and used as a catalyst in reactions to produce a wide array of products from polymers to pharmaceuticals.

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Q1. Describe how distillation can be used to separate two miscible liquids.

Q2. The copper is removed from the distillate by being absorbed onto magnetite nanoparticles. What makes a particle a nanoparticle and what property do nanoparticles have that make them good at absorbing the copper?

Q3. Why is it important to recover the copper?