In this talk we will use the modular approach with Hilbert newforms to show that equations of the form $x^13+y^13 = Cz^p$ have no solutions (a, b, c) such that $gcd(a, b) = 1$ and 13 does not divide c if $p > 13649$. Indeed, we will first relate a putative solution of the previous equation to the solution of another Diophantine equation with coefficients in $Q(\sqrt{13})$. Then we attach Frey curves E over $Q(\sqrt{13})$ to solutions of the latter equation. Finally, we will discuss modularity of E and irreducibility of certain Galois representations attached to it. These ingredients enable us to apply a modular approach via Hilbert newforms to get the desired arithmetic result on the equation.