SUPPORT DATA FOR MANUSCRIPT:

“From laboratory catalysts to a new prototype: A novel real candidate for the isomerization of C5-C6 paraffins.”

EXPERIMENTAL:

Mercury Porosimetry of Pilot and Lab catalysts

*Mercury porosimetry intrusion. A pore distribution expressed by volume.*
Mercury porosimetry intrusion. A pore distribution expressed on the surface area (cylindrical model)
Mercury porosimetry intrusion. A pore distribution expressed by volume.

Mercury porosimetry intrusion. A pore distribution expressed on the surface area (cylindrical model)
Test conditions:

Catalysts were activated. At beginning the catalyst was heated from room temperature to 748 K \((5 \text{ K min}^{-1})\) (air flow 30 NL h\(^{-1}\)), followed by time lag 3 hours at 748 K. Then, the reactor was cooled to 523 K using nitrogen flow \((50 \text{ NL.h}^{-1})\). Finally, the catalyst was reduced in H\(_2\) stream at 523 K for 2 hours. Catalytic tests were carried out at 523 K and pressure 15 bar \((\text{H}_2)\), using 30 g of n-alkane per hour fed by a HPLC pump (feedstock), with 30.4 NL h\(^{-1}\) of H\(_2\) (text also written in the manuscript).

Test:

A huge number of tests were carried out. Some selected tests are exposed below:

Catalyst “Pilot”.

![Sample Composition / Analysis in laboratory](image)

**Figure.** Products composition and R.O.N. at 200, 225 and 250 °C. Hexane pure and catalyst “Pilot” were used.
**Fig.** Increment of the R.O.N. taking as reference the R.O.N. of the feedstock. The feed was the hexane pure. The catalyst was the Prototype.

**Fig.** Activity of the Prototype using a C5-C6 feed.
UV-Vis data:

![UV-Vis spectra](image)

**UV-Vis spectra.**
HR-TEM of Pt-Lab catalyst