

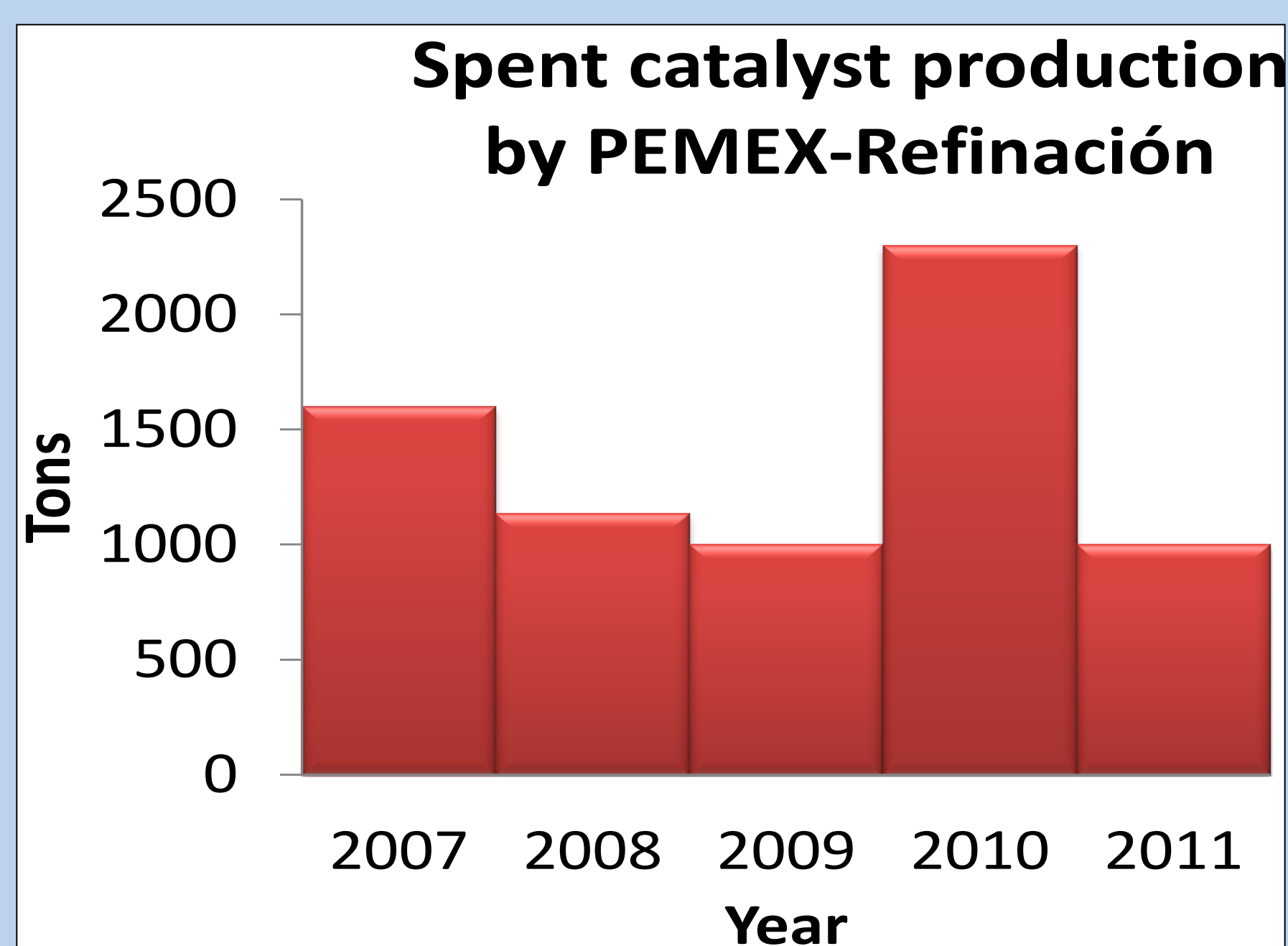
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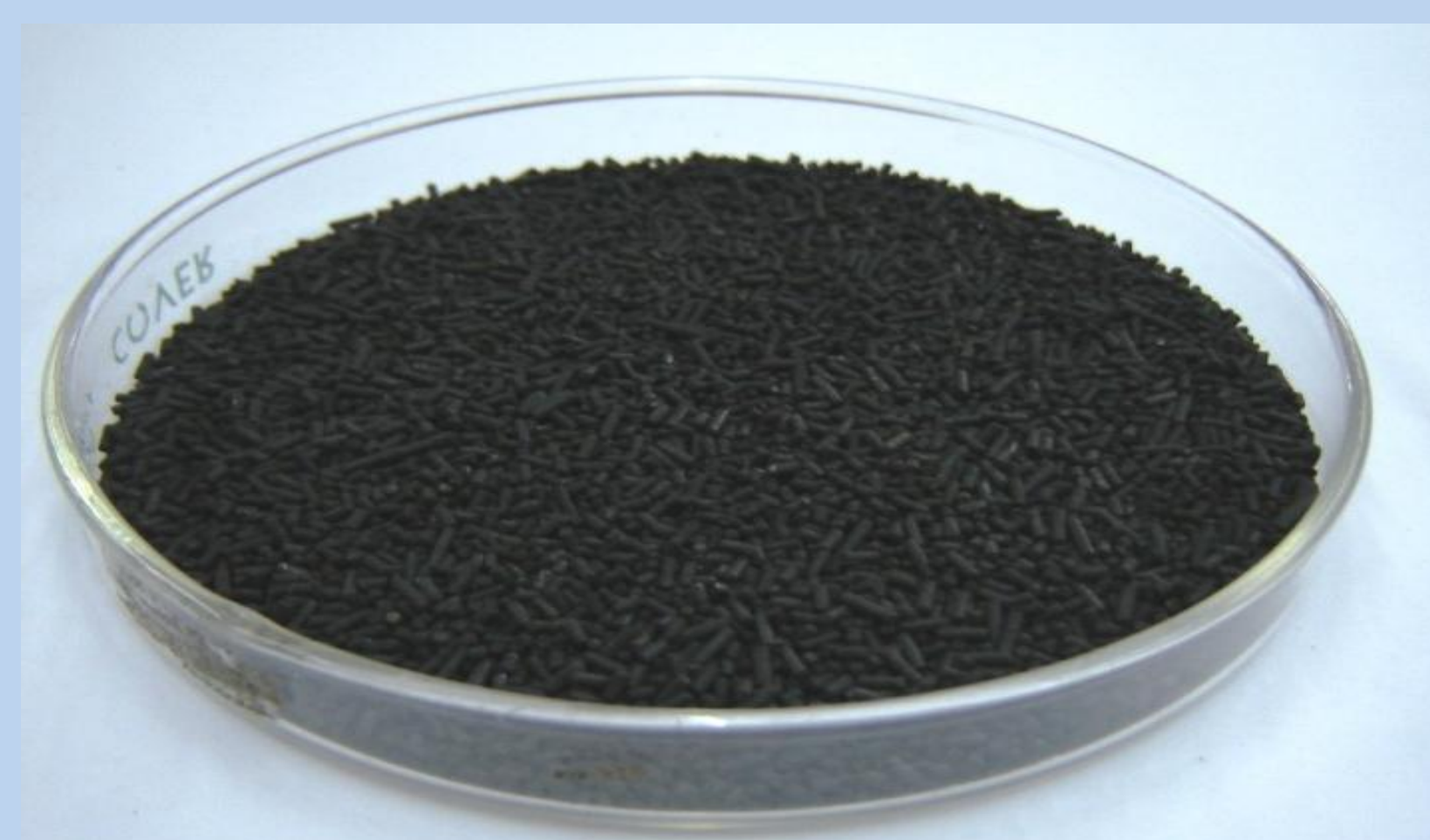
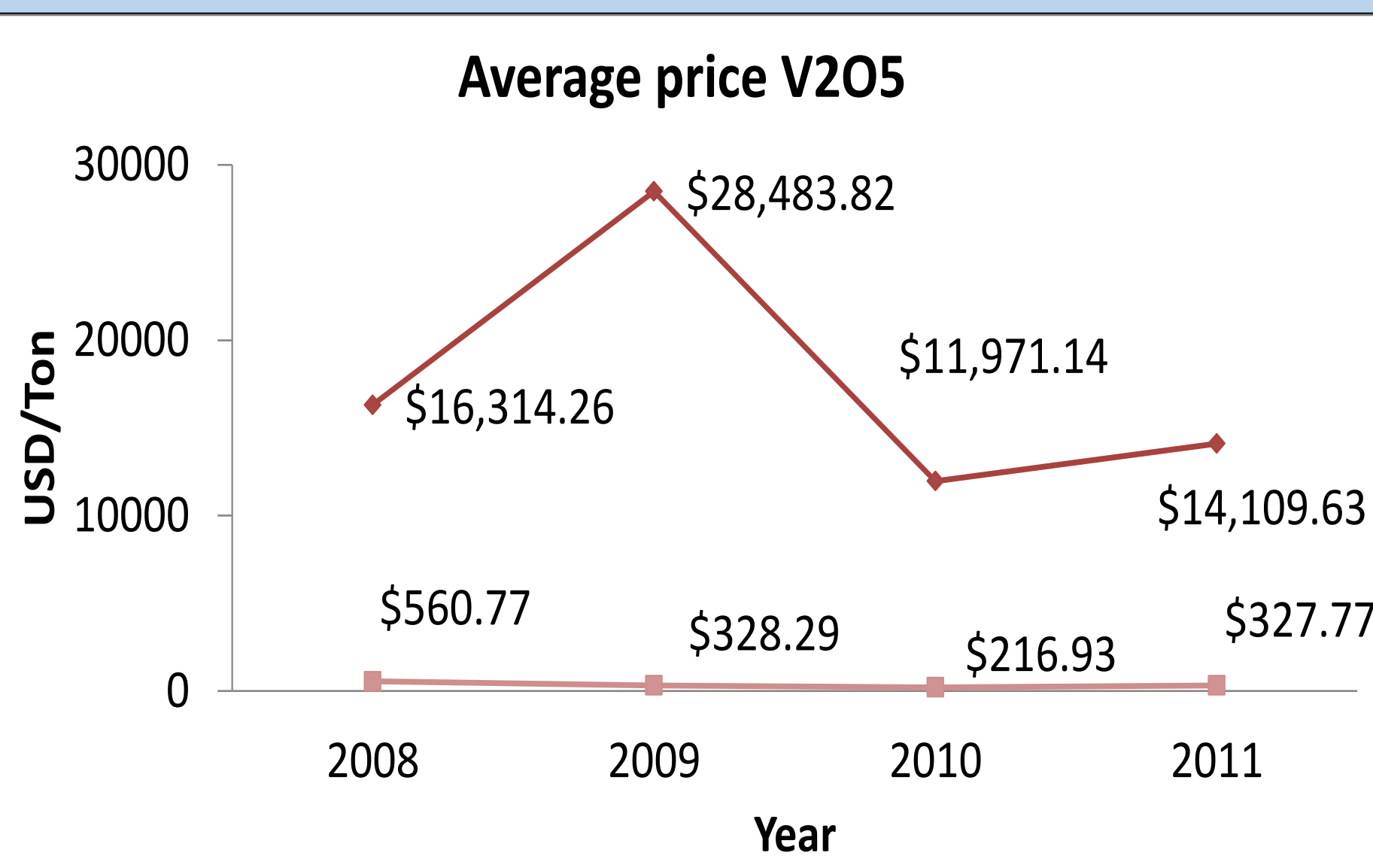
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Introduction

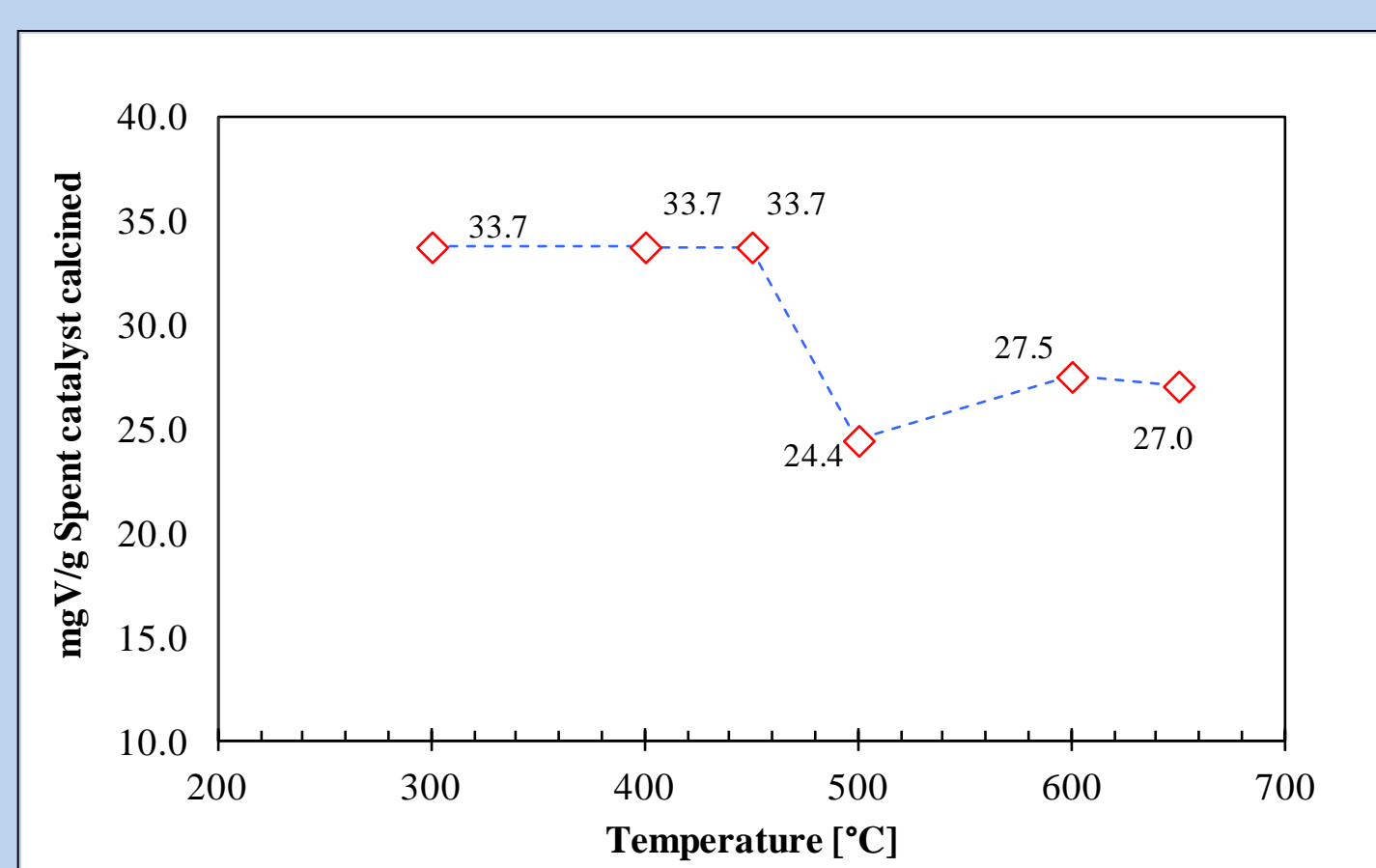
• In the figure below the production of HDS spent catalyst by PEMEX-Refinación is shown.



• The historical performance of the price increase of vanadium pentoxide, and the price of the V_2O_5 content in the spent catalyst sold by PEMEX is depicted in the following chart.



• The effect of the calcination temperature on vanadium concentration is plotted in the figure underneath.

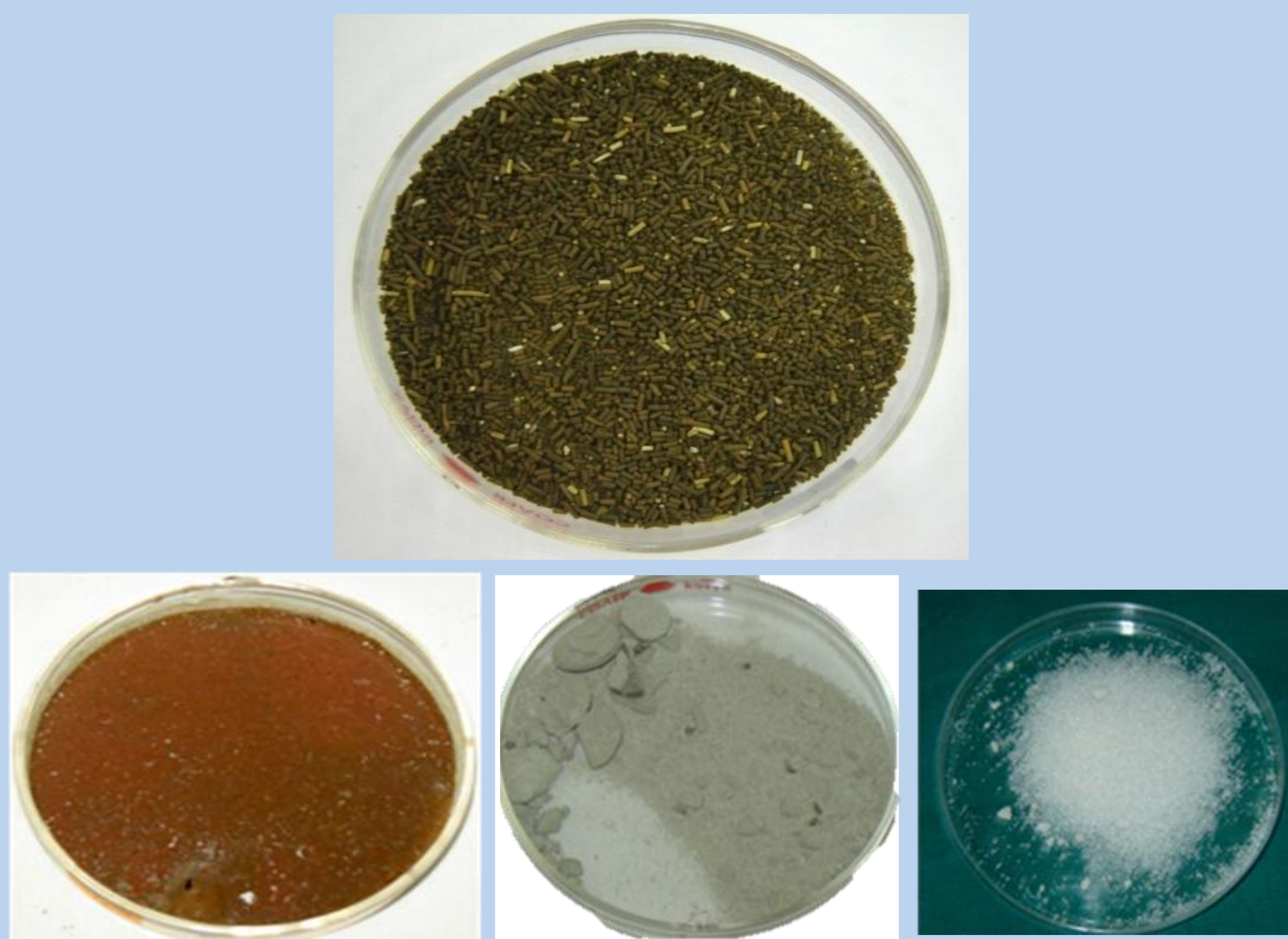


• The sample concentrations are provided in the Table below.

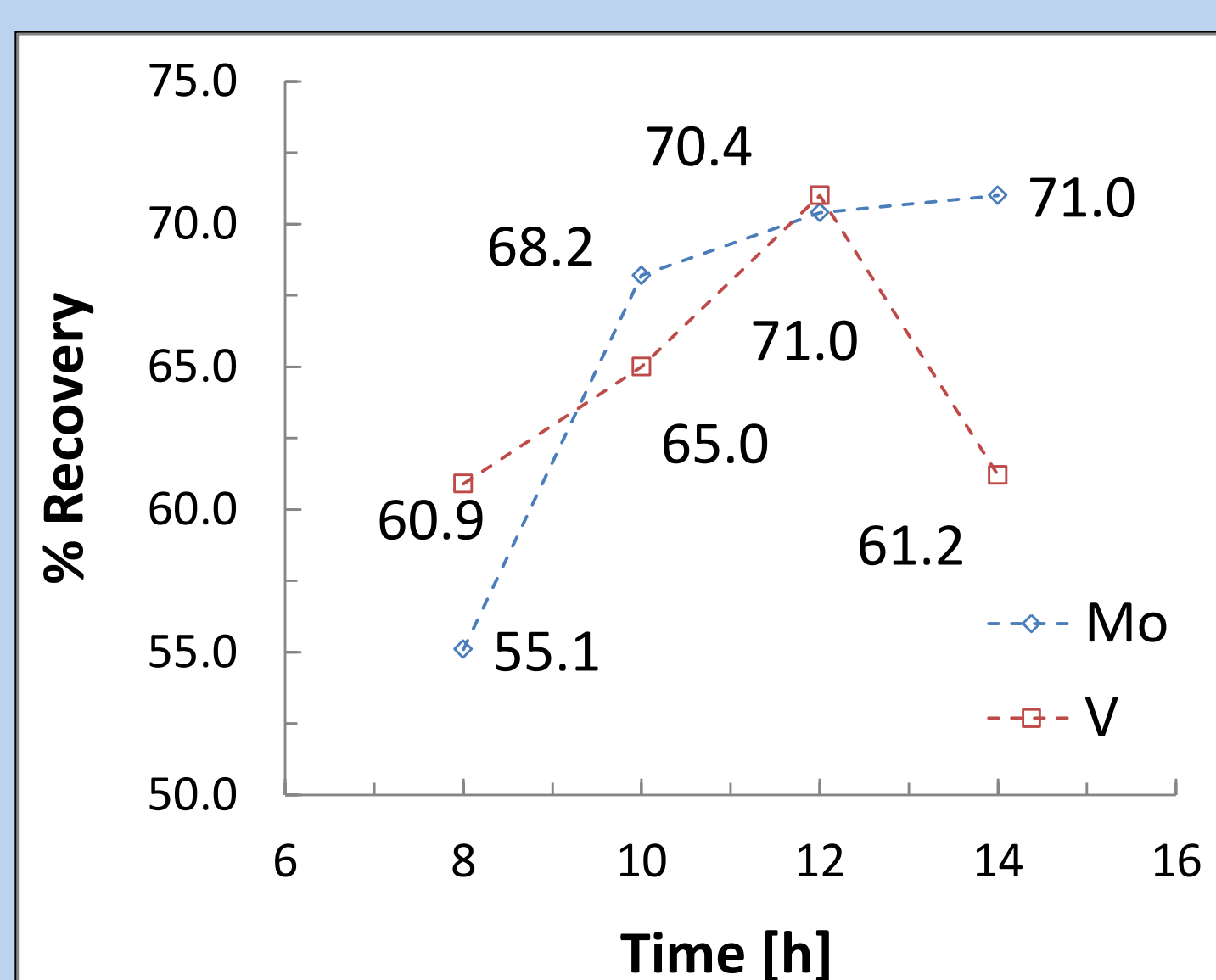
Especie	p/p \pm 1.21%
Al_4C_3	40.84
V_2O_5	22.23
MoO_3	12.13
$NiAlO_4$	11.98
$(VO_2)_2SO_4$	6.66
$\gamma-Al_2O_3$	4.71
Others	1.43

Results

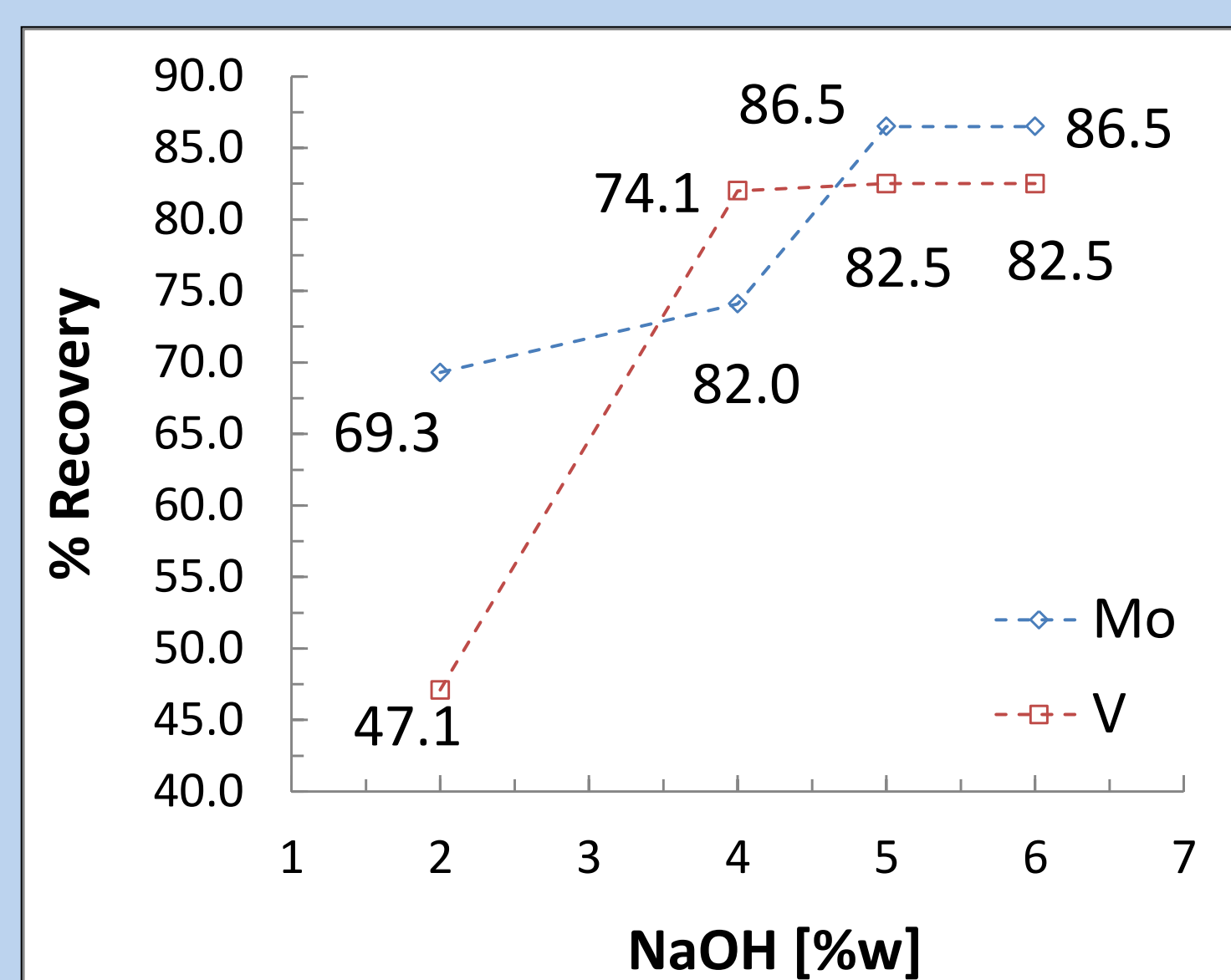
Extractive removal of molybdenum and vanadium was carried out from spent hydrodesulfurization (HDS) catalyst.



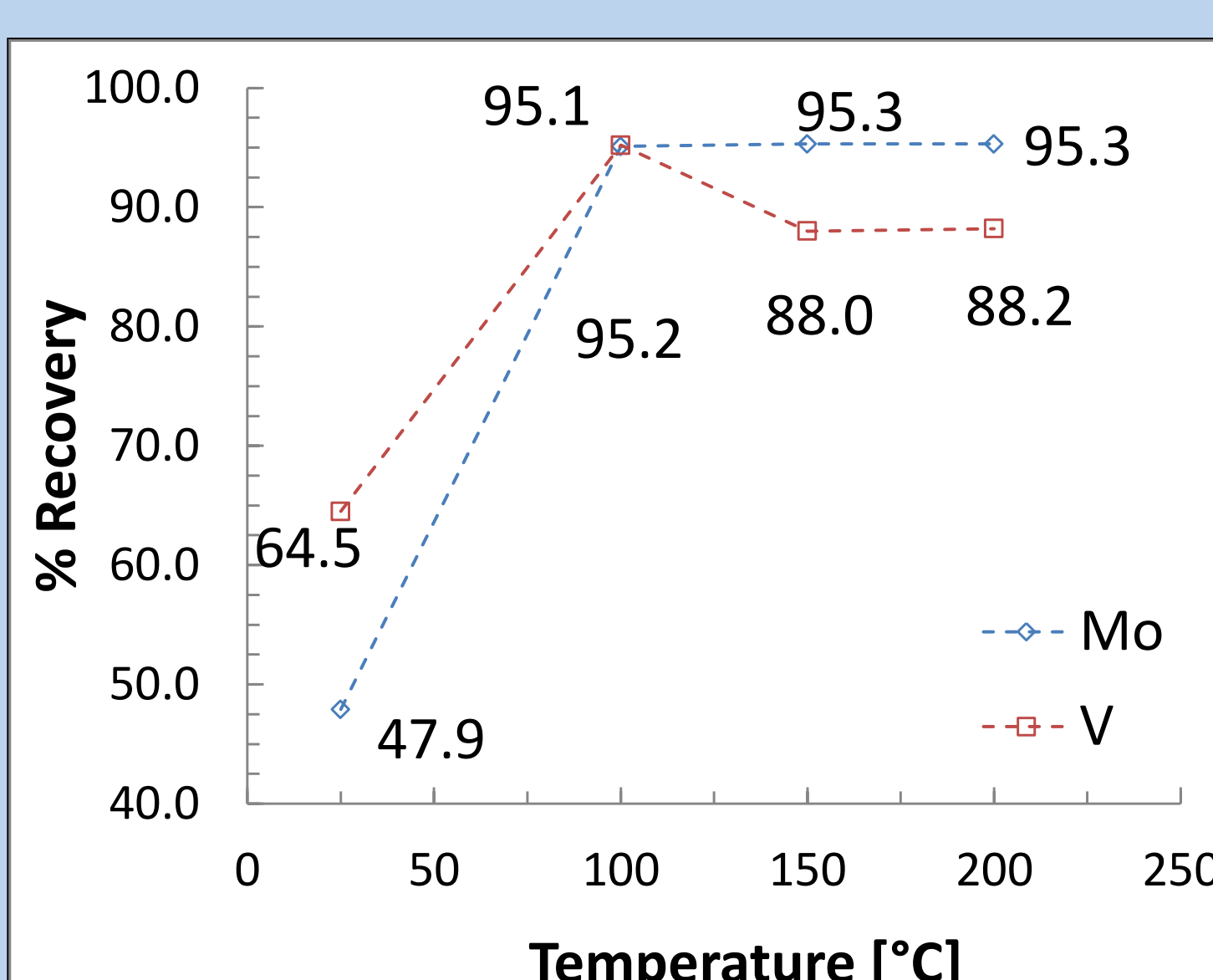
Effect of **reaction time** on vanadium and molybdenum extraction.



Effect of **NaOH concentration** on vanadium and molybdenum extraction



Effect of **temperature** on vanadium and molybdenum extraction



Conclusions

Spent gasoil hydrodesulfurization catalyst may be used as a secondary source for V and Mo. The most suitable conditions for hydrocarbons and elemental sulfur removal are calcination during 4 hours at 450 °C. It is possible to recover up to 95% of V and Mo, if the product reacts with 5 wt.% NaOH solution at 100 °C, with a reaction time of 12 hours. The remaining product from the dissolution reaction contains nickel and aluminum.

Acknowledgments

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All papers are organized and published on a USB stick, according to the session order. In addition, a book has been printed with the extended executive summaries of the conference papers, in order to allow a better attendance of the different sessions. Last minute changes in the conference program may have resulted unconformity with the printed book of executive summaries.

Selected papers, presented (orally or as a poster) during CRETE 2012 Conference, will be forwarded for review and publication in selected scientific Journals.

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- P15.** *Determination of mercury(I) and mercury(II) in binary aqueous mixtures using titrimetric analysis*
Elijošiutė E., Griškoniš E., Jankūnaitė D., Denafas G. (LT)
- P16.** *Development of magnetic nanoparticles for Cr(VI) removal from drinking water integrated by a magnetic separation system*
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