

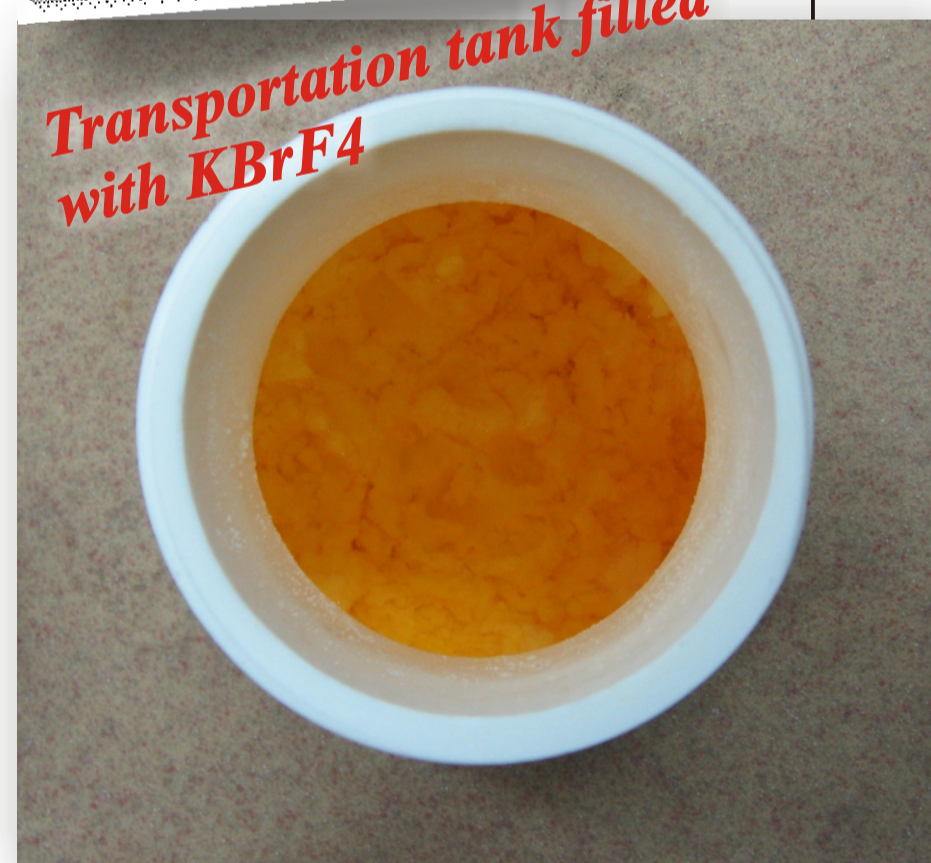
Scheme of W-Pd alloy recycling technology

The W-Pd alloy was fluorinated with $KBrF_4$ after preparation with chemical surface etching. Volatile WF_6 was sublimated and condensed on next stage. Oxidized palladium compound was transferred to solution in chloride form and precipitated in $(NH_4)_2PdCl_6$. Last compound decomposed to metallic Pd after drying and reducing melting in muffle furnace

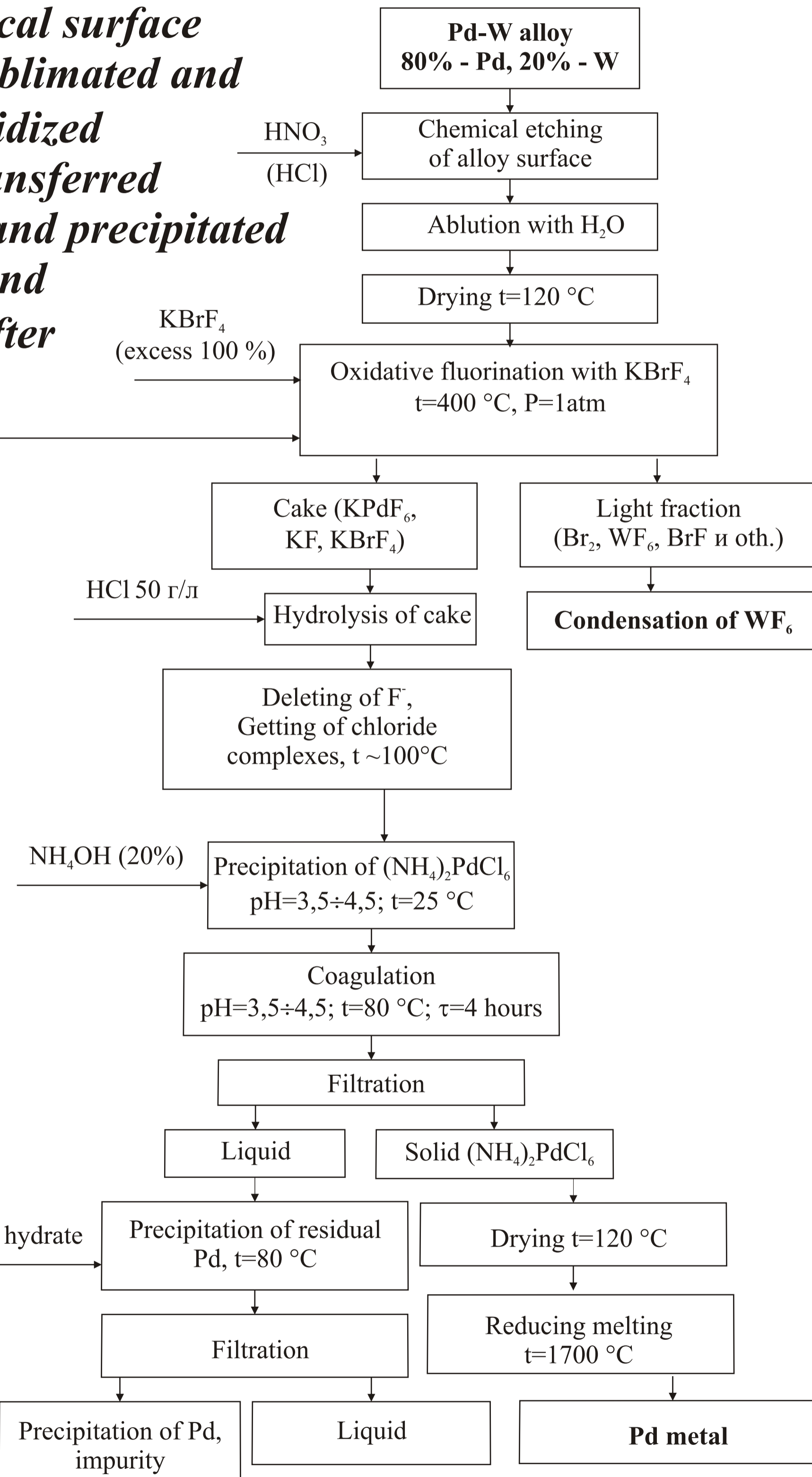
Cake after fluorination



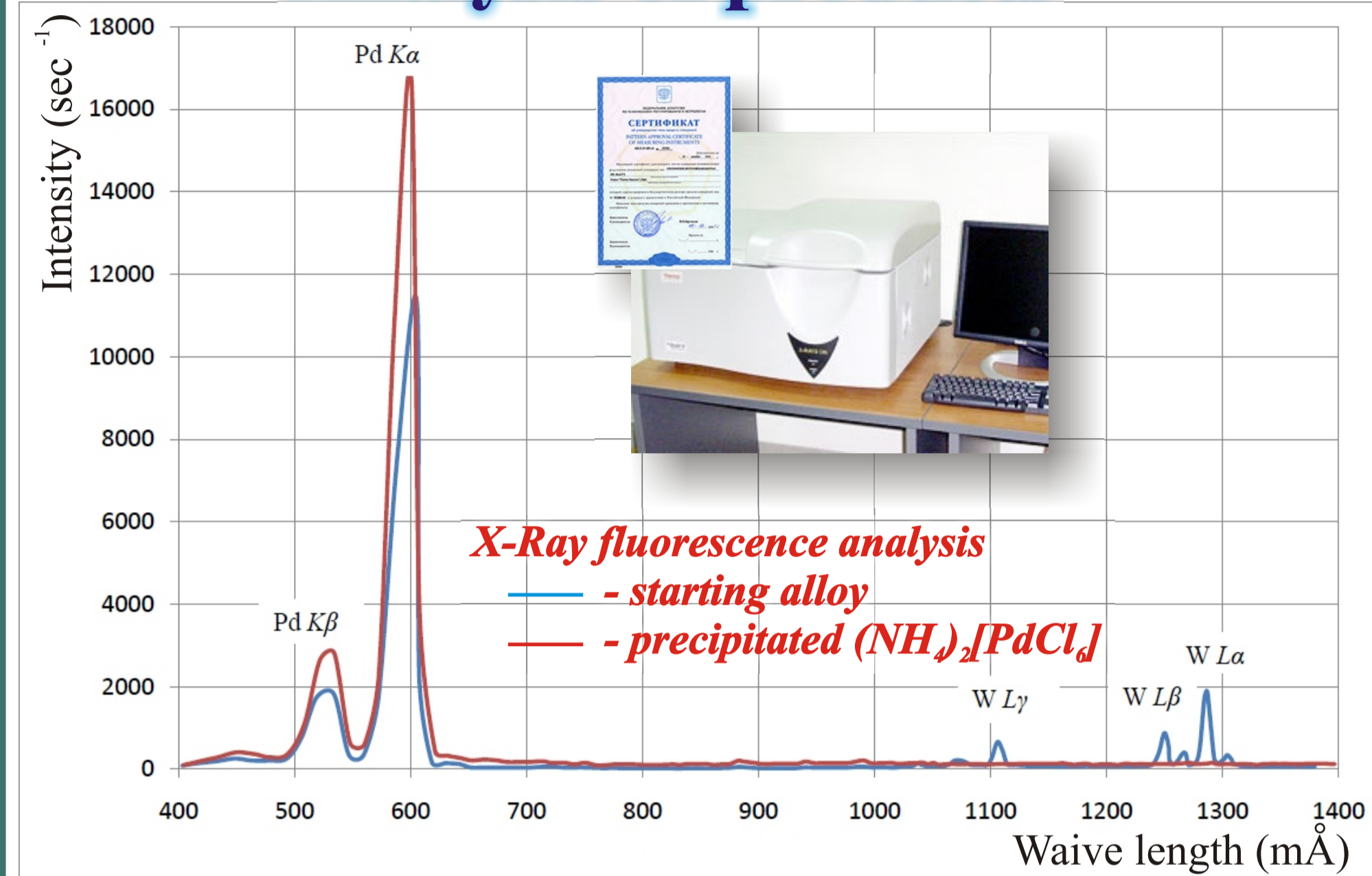
Transportation tank filled with $KBrF_4$



Obtained Pd powder



Analysis of products



X-rays fluorescence analysis (Quant X USA; Spektroskan Max-G, Russia).

In current research palladium of the "Prioksk Plant of Nonferrous Metals" was used

For analysis of products on different stages following equipment was used:

Atomic emission spectral analysis with inductively coupled plasma (iCAP6300 DUO), IR-spectrometer (Nicolet 5700),



Conclusions

1. Feasibility of $KBrF_4$ application in Noble metals technology was investigated
2. Scheme of alloys based on refractory and Noble metals recycling technology was suggested.
3. As a result palladium powder (99,95 %) was obtained during the implementation of suggested technology.

References

1. *Inorganic Chemistry*. Editor: Tretyakov U. D. Vol.3: Chemistry of transition elements, 2007.
2. Mitkin V. N. *Spectrochimica Acta*, 135-175 (2001)

