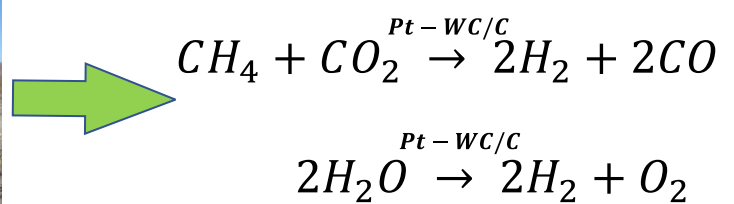
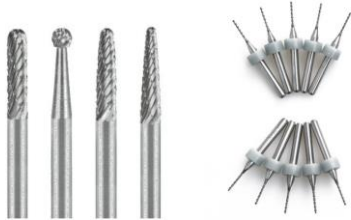




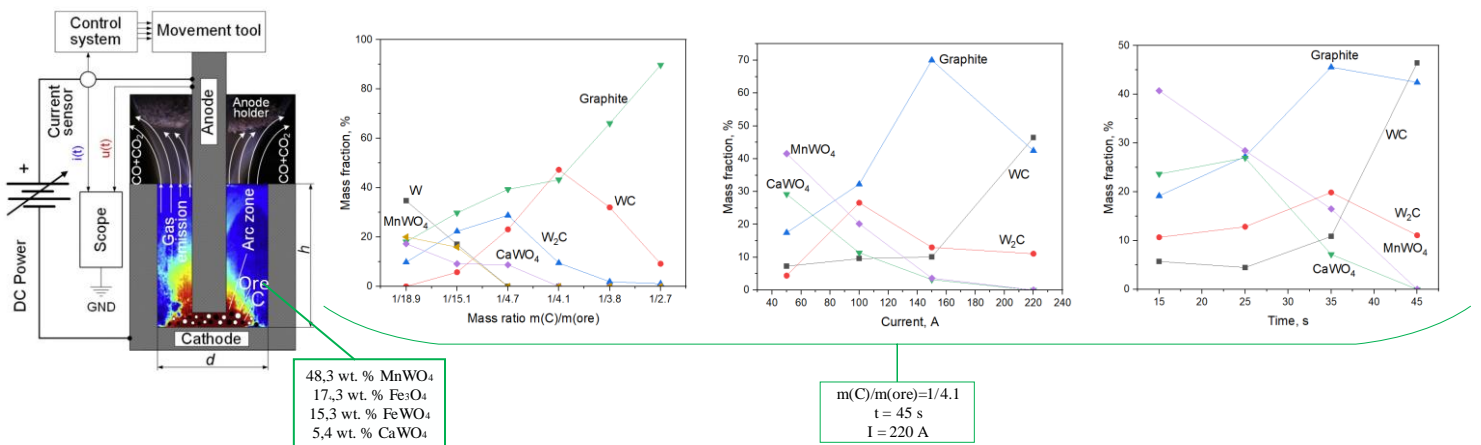
**Analysis of the product of processing tungsten ore concentrate by the electric arc discharge method in open air**  
Kokorina A. I.

In the present study, investigation of the tungsten carbide powder as a result of arc discharge plasma synthesis from tungsten ore concentrate is performed. Arc discharge was maintained in the open-air environment. This method is vacuum-free because of the self-shielding effect caused by generation of CO and CO<sub>2</sub> gases. The initial materials are ore concentrate and carbon. XRD, SEM, TEM and electrocatalysis methods were used.

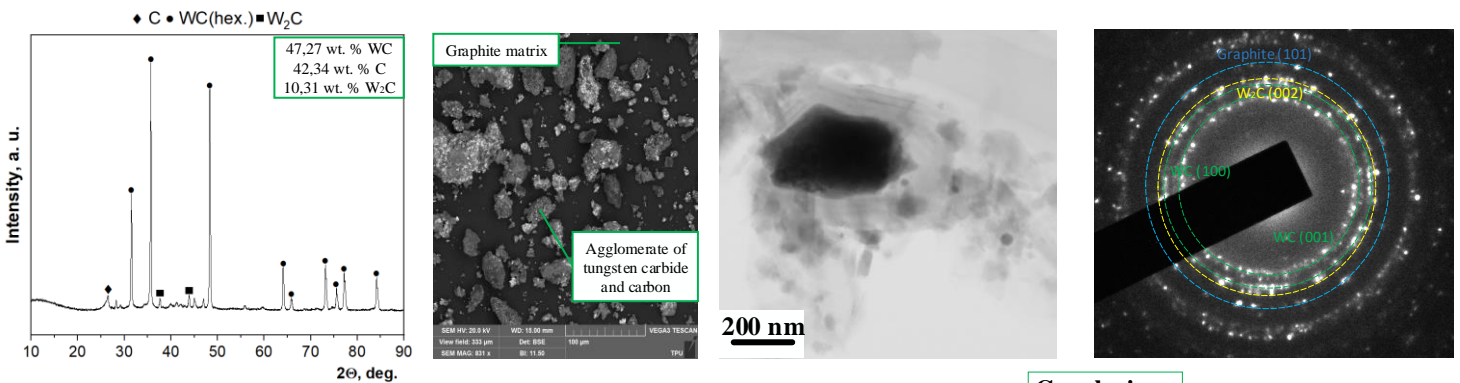
**Relevance**



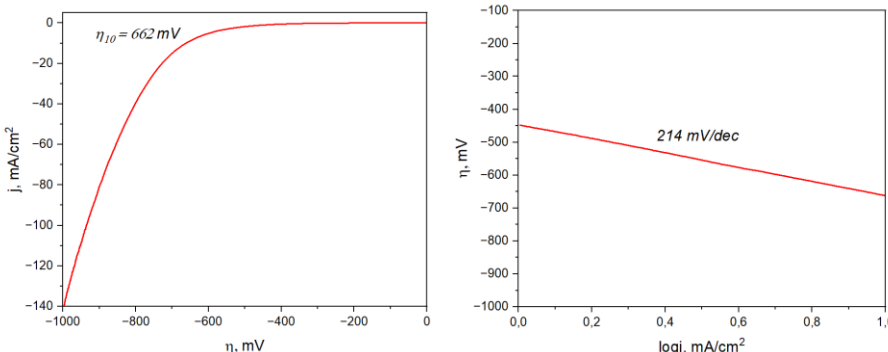
**Electric arc discharge synthesis**



**Results and discussion**



**Conclusions**



1. It's possible to obtain a powder based on tungsten carbide from ore using vacuum-free arc discharge method.
2. At m(C)/m(ore)=1/4.1, t = 45 s and I = 220 A mass fraction of WC is 47,27 wt. %.
3. Synthesized powder includes microscale and nanoscale tungsten carbide particles.
4. Obtained powder has higher Tafel slope and overpotential than literature examples.