

## New $^{40}\text{Ar}/^{39}\text{Ar}$ ages of Sn- and W-polymetallic mineralization in the Erzgebirge / Krušné hory (DE, CZ)

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The Erzgebirge/Krušné hory (DE, CZ) is known for different types of late-Variscan greisen mineralization with high potential for rare metals. Four greisen types (GT) can be distinguished: GT1, Sn-Li(-W-Mo)-greisen with quartz, topaz, Li-micas, fluorite, cassiterite, wolframite, sulfides (e.g. Krupka, Zinnwald); GT2, Sn-greisen with quartz, topaz, (Li)muscovite, fluorite, cassiterite, wolframite, sulfides (e.g. Gottesberg); GT3: Sn(-W-Mo-Li-Zn-Cu-In)-greisen with quartz, Li-mica, topaz, fluorite, chlorite, cassiterite, sulfides (e.g. Sadisdorf); GT4: W(-Mo-Bi)-greisen/veins with quartz, (Li)muscovite, wolframite, scheelite, sulfides (e.g. Pechtelsgrün).

New  $^{40}\text{Ar}/^{39}\text{Ar}$  analyses of greisen-micas show well defined plateau ages: Sn-W-Mo deposit Knötel (Krupka), protolithionite in quartz-mica greisen with molybdenite and wolframite:  $312 \pm 3.1$  Ma; Li-Sn-W deposit Zinnwald, zinnwaldite in quartz-mica greisen (massive greisen and vein-greisen):  $311.4 \pm 3.0$  Ma and  $312.5 \pm 3.1$  Ma; Sn(-W-Mo-Cu-Zn-In) deposit Sadisdorf, Li-mica from the mica-quartz-topaz-greisen ("Innengreisen"):  $310.0 \pm 3.5$  Ma; W-Mo-Bi deposit Pechtelsgrün (290 m level), muscovite in mica-quartz-greisen with W-Bi mineralization:  $318.2 \pm 3.1$  Ma and with W-Mo-mineralization:  $320.4 \pm 3.0$  Ma.

Previous [1, 2, 3, 4] and new age data indicate that the W-Mo association (GT4: 320 Ma and 318 Ma) is the first late-Variscan mineralization stage in the Erzgebirge. The Sn(-W) association with GT1 (315-309 Ma) and GT3 (310 Ma) show younger age data. In summary the above mentioned data confirm that the W-Mo and Sn-W association are spatially and temporally related to different post-collisional granite/rhyolitic and lamprophyric intrusions (320-290 Ma).

[1] Seifert & Kempe (1994) *Beih. Eur. J. Miner.* **6**, 125-172. [2] Baumann, Kuschka, Seifert (2000) *Lagerstätten des Erzgebirges*, Enke Verlag, 300 pp. [3] Seifert (2008) *Metallogeny and Petrogenesis of Lamprophyres in the Mid-European Variscides*, IOS Press, 303 pp. [4] Seifert et al. (2011) *Mineralogical Magazine* **75**, 1833.