PŮVODNÍ PRÁCE/ORIGINAL PAPER

# Anatas, brookit a rutil z pegmatitu u Bobrůvky, strážecké moldanubikum, Česká republika

## Anatase, brookite and rutile from pegmatite near Bobrůvka, Strážek Moldanubicum (Bohemian Massif, Czech Republic)

Juraj Mozola[1)]*, Petr Gadas[1)], Vladimír Hrazdil[2)] a Pavlína Radková[1)]

*[1)] Ústav geologických věd, Masarykova Univerzita, Kotlářská 2, 611 37 Brno;*
**e-mail: 382423@mail.muni.cz*
*[2)] Mineralogicko-petrografické oddělení, Moravské zemské muzeum, Zelný trh 6, 659 37 Brno*

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### Abstract

Polymorphs of $TiO_2$ (anatase, brookite and rutile) with notable amount of minor elements were described from Bobrůvka - Houperek hillock (Strážek Moldanubicum, Czech Republic). Together with tourmaline and fluorapatite they occur in albite-muscovite pegmatite. This rock is characerized by simple texture as well as quite primitive mineral composition that points to close relationship to so called „smoky quartz pegmatites“. Presence of minor elements in structure of Ti-oxides studied is reflected in complex zoning, most remarkable in rutile and to a lesser extent in anatase and brookite. They are represented by Nb, W, Fe, Ta, Al etc. and reach up to X wt. % in anatase and brookite and sometimes up to X0 wt. % in rutile. Two main substitution mechanisms were distinguished: A) $3Ti \rightarrow 2(Nb>Ta)_{-1}Fe^{2+}_{-1}$ and B) $2Ti \rightarrow W_{-1}Fe^{2+}_{-1}$. It is the first known occurence of W-rich brookite worldwide and just a second occurence of W-rich anatase described. Processes leading to formation of minerals with this unique composition were probably combination of postmagmatic fluids and fluids with origin in host rocks.

***Key words:*** *anatase, brookite, rutile, trace elements, pegmatite, Bobrůvka, Strážek Moldanubicum, Czech Republic*
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