

Teleconference Call Summary

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Thursday, 10/28/99, 10:30am

1. Can the results from texture analysis be used to qualify substandard material? For example, can substandard material be found acceptable:

NO \Rightarrow Spec will determine.

\rightarrow are acceptable for basal poles
i. from partial direct pole figures (i.e., $\phi > 60^\circ$, the specimen tilt angle measured from the surface normal)

$I \Rightarrow 0$ beyond $\phi > 50$

\Rightarrow difficult to get 0002 beyond ± 45

need to get I data up to

yes. basal pole fig. I in $\phi \Rightarrow$ no problem.

\Rightarrow yes, would be able to see a non-typ. texture

ii. if only one test specimen is prepared (i.e., the RD specimen) vs. 3 orthogonal specimens

don't need 3 orthogonal \Rightarrow need 3 to construct whole pole fig...
as long as I is concentrated around RD in a TD-LD pole fig

iii. even though the maximum intensity, I_{max} , and the location of the basal plane maxima, ϕ_{RD} , $\pm 35^\circ$ on a RD-TD (i.e., radial direction-transverse direction) direct pole figure are within the expected ranges

$\phi_{max} \rightarrow$ Intensity \Rightarrow Substandard material may have lower I than for good mat'l

manufacture spec of $I_{max}(\phi_{max}) = 5.0 \times \text{random}$ vs. $2.5 \times \text{random} \Rightarrow$ # of basal poles oriented to RD

2. What effect does obtaining data from the shoulder of a 2-theta peak (i.e., 0.5° away from the maximum intensity) have on a direct pole figure?

\Rightarrow effects not much; may affect intensity slightly...

\Rightarrow width of peaks \Rightarrow may vary, don't know

3. Regarding direct pole figures, what would be an acceptable variation in peak intensity (at 2-theta) and location of the basal plane maxima from one sample to another? No, don't know.

$\phi = 35 \pm 2^\circ$
depends

Maximum \Rightarrow specified

based on mechanical properties

4. Have you ever seen pole figure data where the basal planes (i.e., the (0002) planes) are positioned $\pm 35^\circ$ from the longitudinal direction of a tube specimen on a RD-TD direct pole figure? How would the mechanical properties of cladding with this type of texture differ from cladding material with a basal pole maxima located $\pm 35^\circ$ from the RD (on a LD-TD direct pole figure)?

Anisotropy will be different. YS

No \Rightarrow need to do complete pole figure

* relative property in 1 specimen * not from 1 sample to another

σ_{UTS} vs $\sigma_{UTS} \Rightarrow$ will be different, relatively speaking

Summarize conclusion: