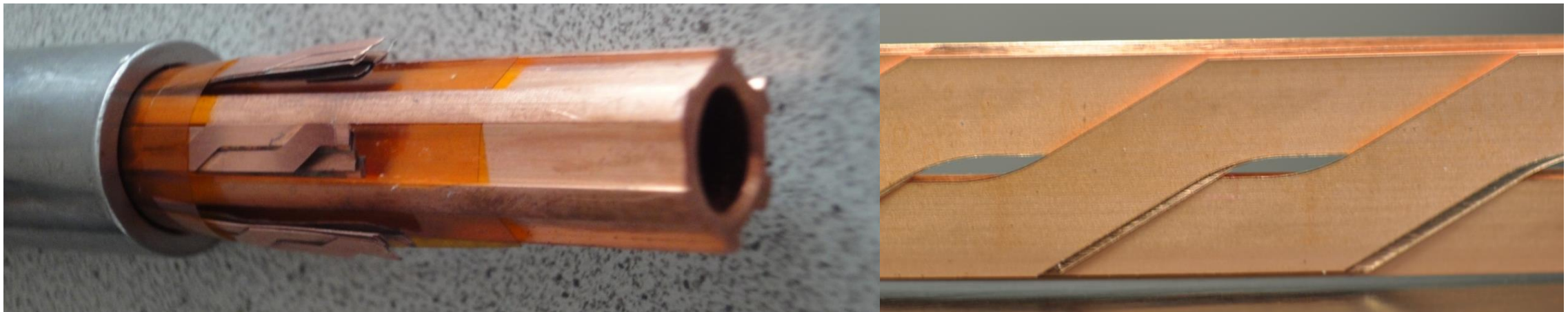


WAMHTS-2 Kyoto

Nov. 13-14, 2014

Recent news on Roebel cable research

W.Goldacker, A.Kario, F.Grilli, E.Demencik, R.Nast, A.Kling, M.Vojenciak*, B.Ringsdorf,
Institute for Technical Physics, ITEP, Karlsruhe Institute of Technology, * IEE-SAS Bratislava,



RACC cable with longer transposition (SuperOx – CC Tape)

Data: **31 strands**, $w = 5.5 \text{ mm}$, $l_t = 426 \text{ mm}$, $I_c (77\text{K, s.f.}) = 2.75 \text{ kA}$

Extrapolated currents applying

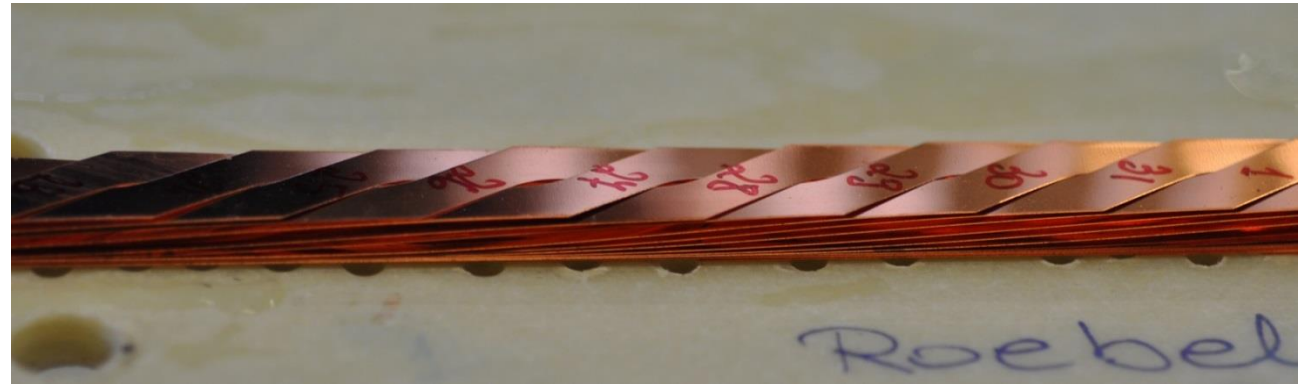
lift factor (77 K to 4.2 K): $\times 12^*$

$I_c (4.2 \text{ K- s.f.}) > 33 \text{ kA}$

$I_c (4.2 \text{ K, } 10 \text{ T par.}) > 24 \text{ kA}$

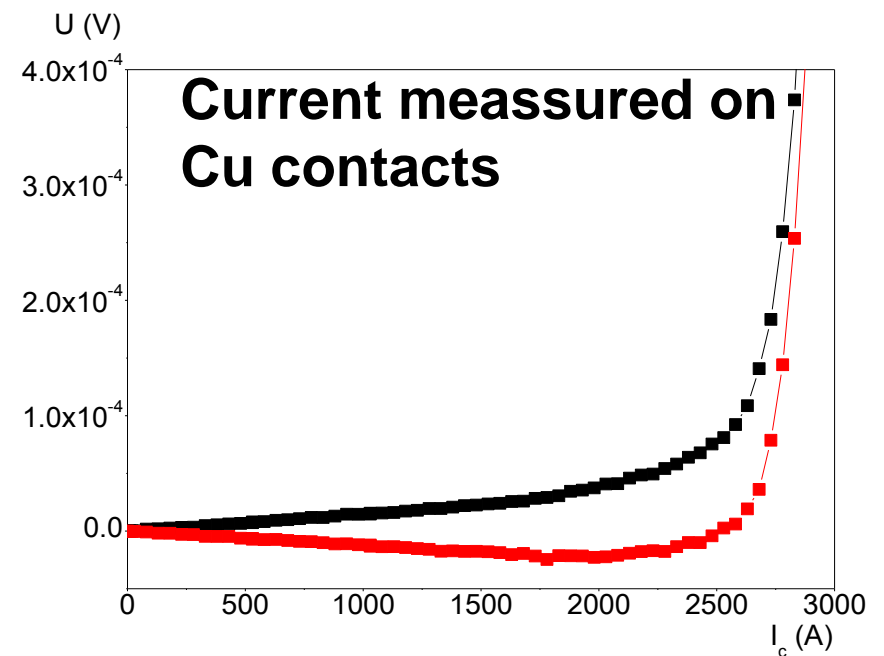
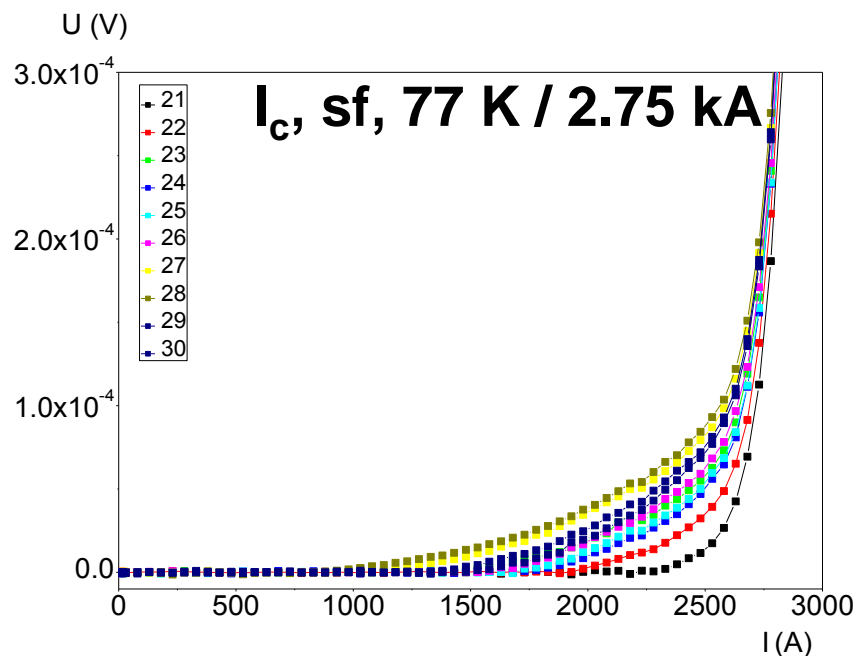
$I_c (4.2 \text{ K, } 10 \text{ T perp.}) > 6 \text{ kA}$

*Real lift factor tbd. !

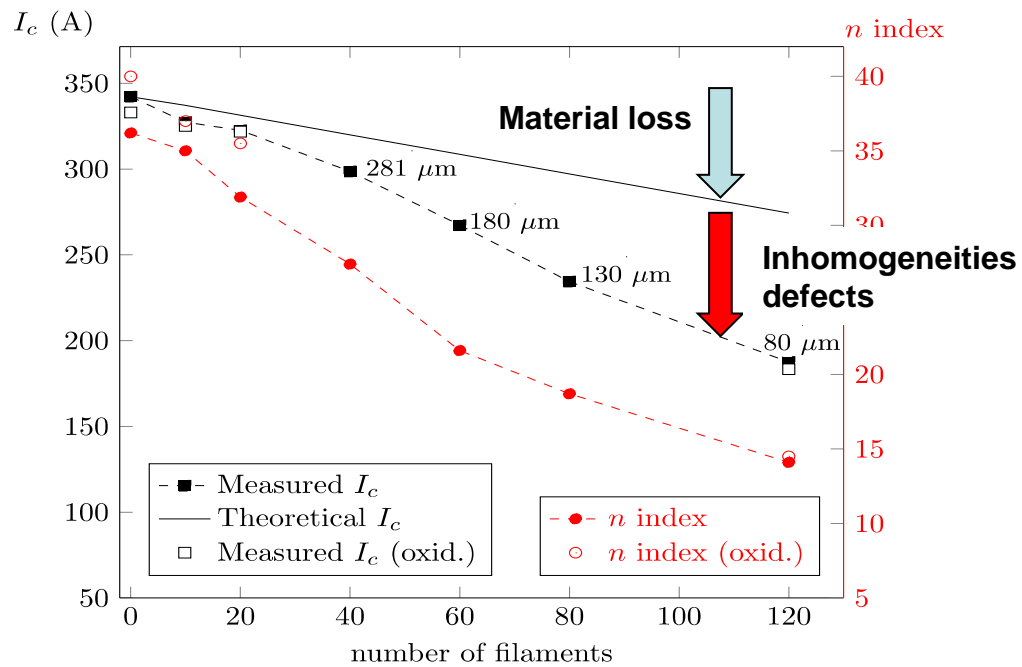


- Some I_c inhomogeneities in strands
- Excellent Cu-clad quality !!

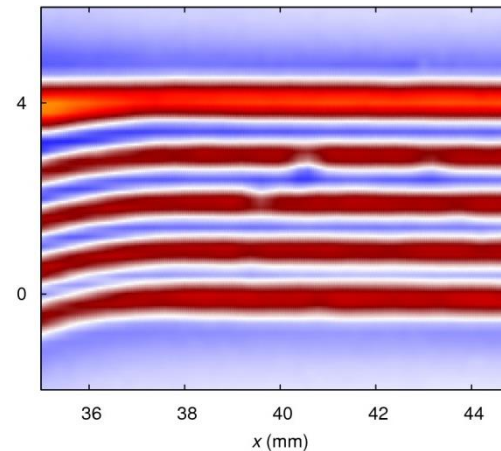
Transposition length at KIT is flexible, can be adapted to magnet design requirements



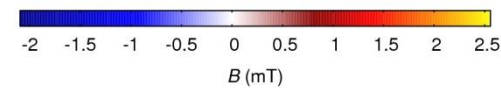
Filaments as tool to measure CC homogeneity



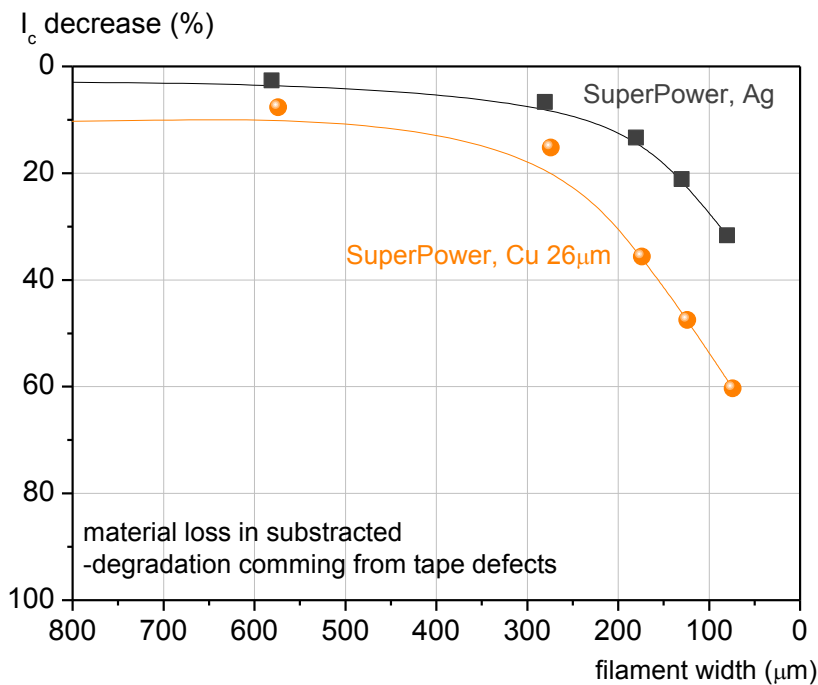
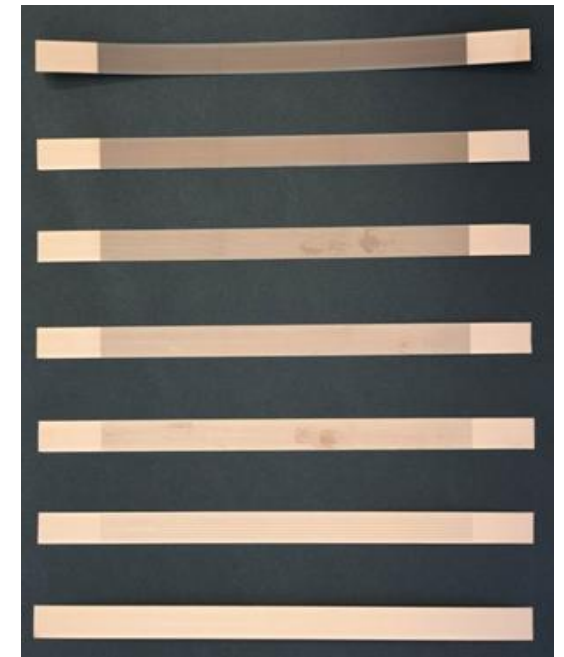
Filaments in Roebel strands



Defect sizes reach 100-300 microns



Hall-probe scans: J Emhofer IEEE Trans. Appl. Supercond. 21(2011) p.3389.



A standard pattern and method is under work quantifying homogeneity in CC as quality control

Last Information

THEVA plans to start CC selling Jan. 2015

First 1 m sample at KIT received

Thanks !