In-Situ Secondary Electron Yield Measurements for CESRTA: Update

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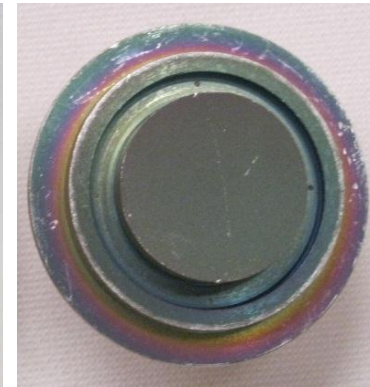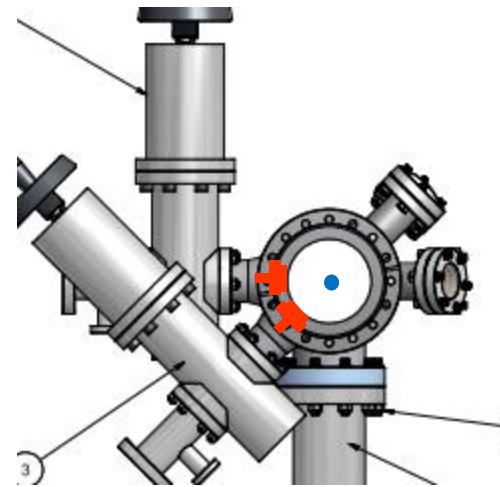
CESRTA Collaboration Meeting ● 22 January 2013

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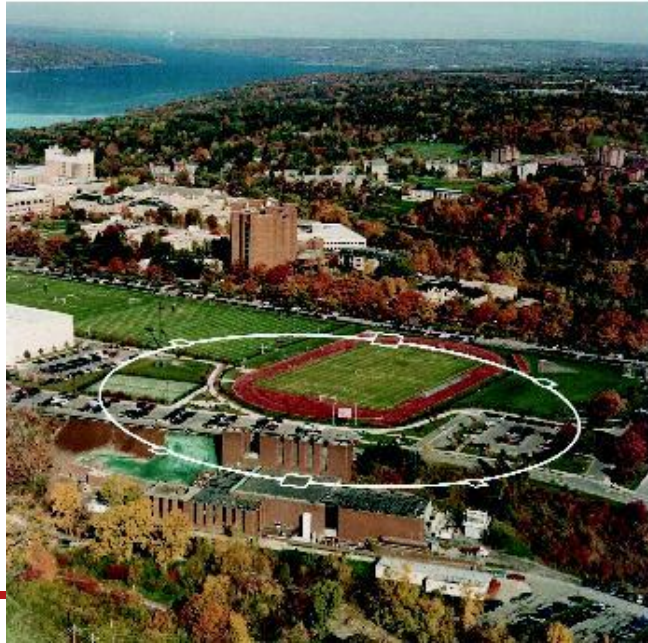
Horizontal Station

Beam Pipe

45° Station

TiN-coated sample

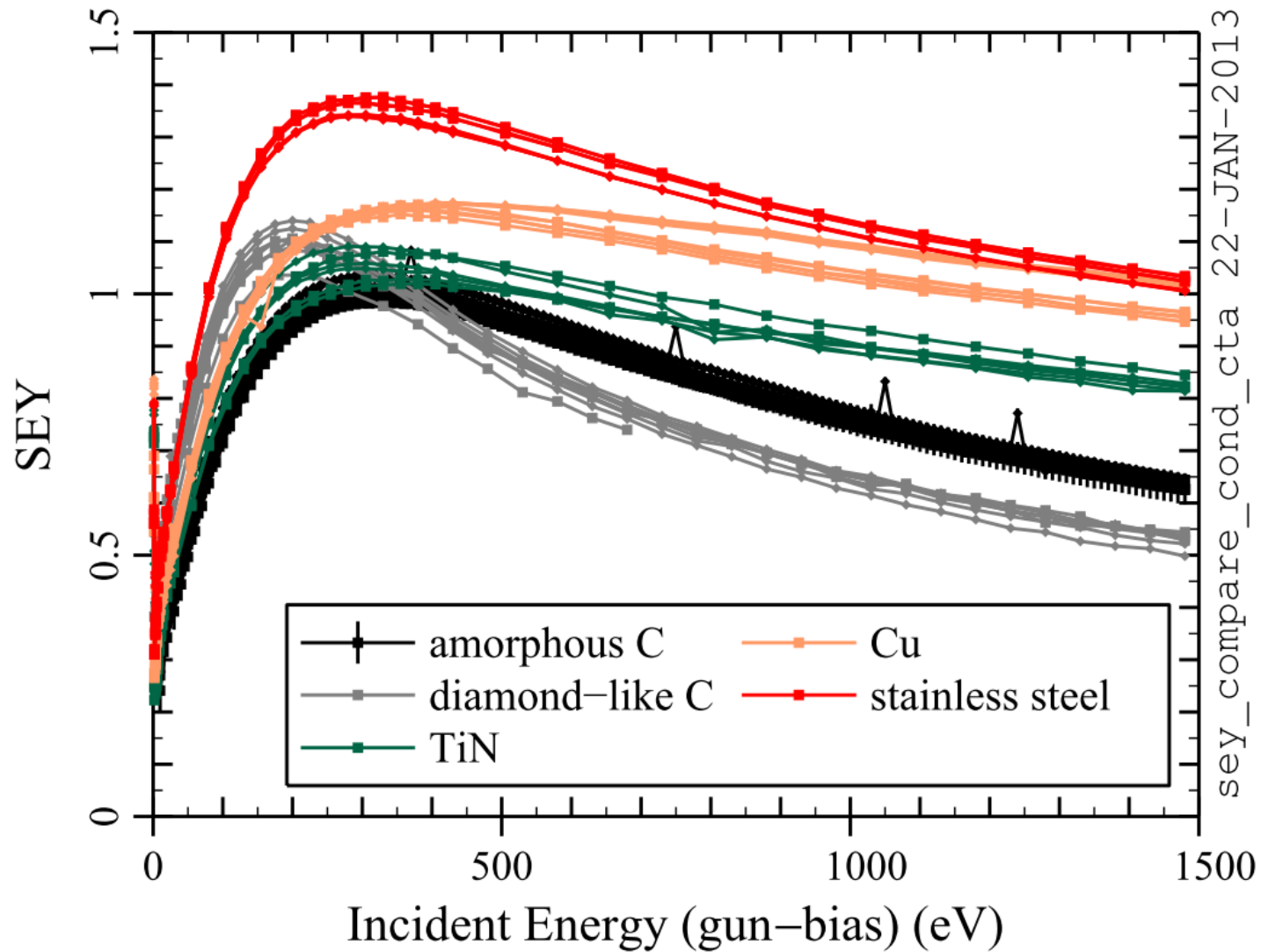"Beam's eye" view

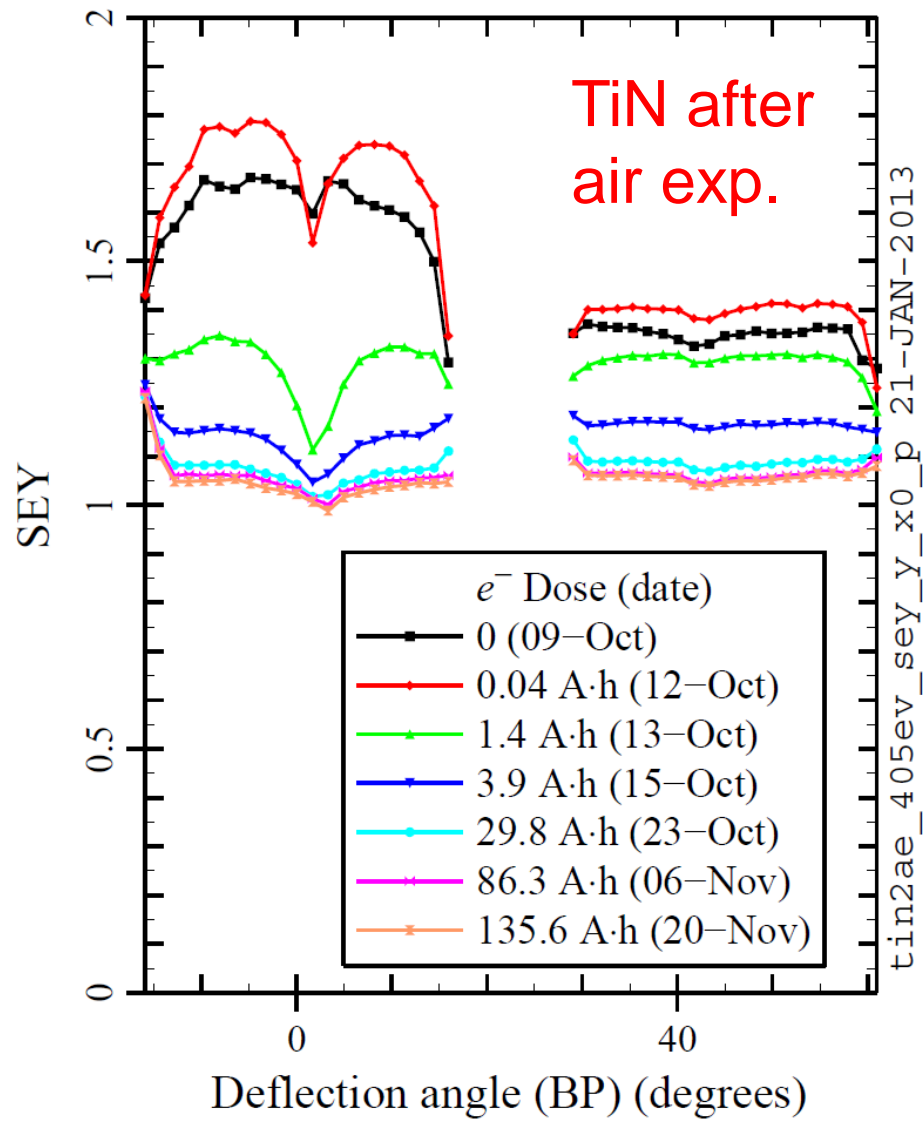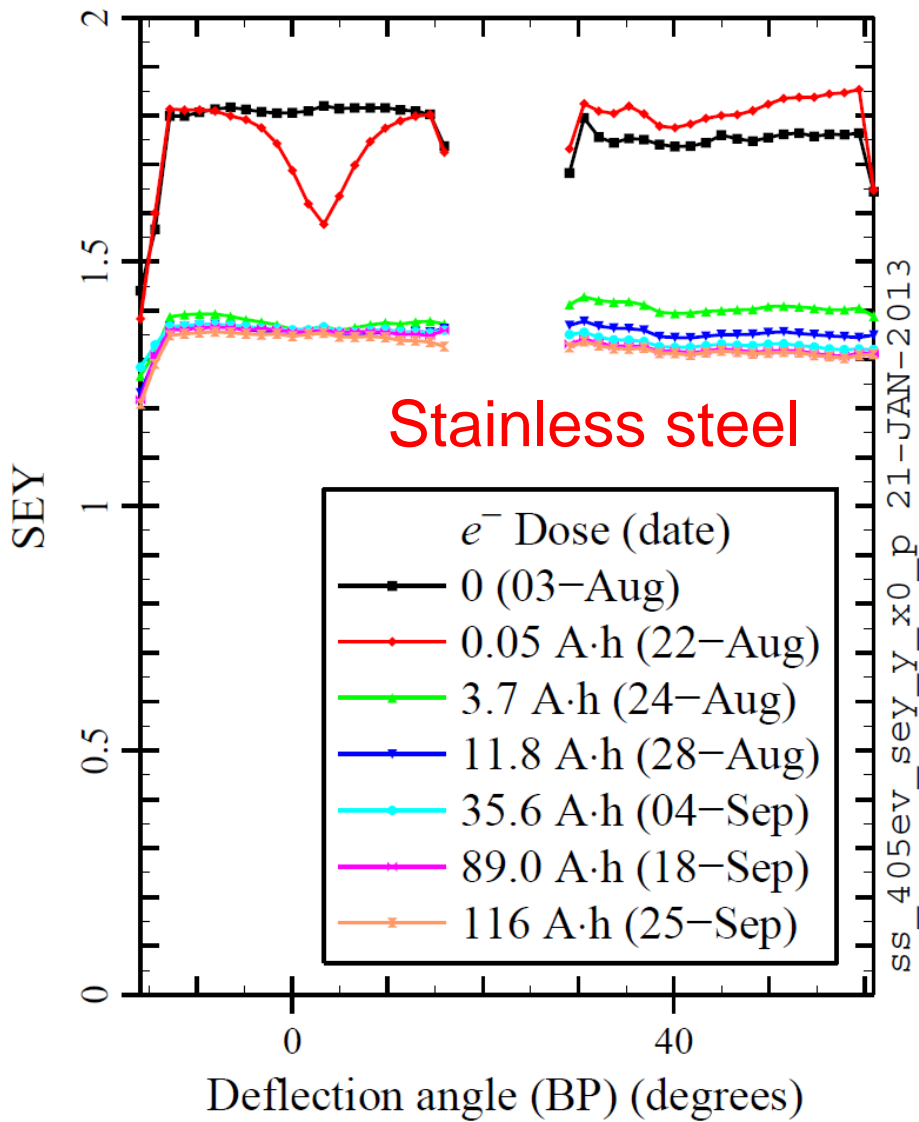| Material	Dates	Comments
TiN 1st pair	Jan 2010-Aug 2010	Samples from SLAC
Al	Aug 2010-Nov 2010	6061-T6 alloy
Amorphous C	Nov 2010-Jan 2011	Coating by CERN
Diamond-like C	Sep 2011-Nov 2011	Coating by KEK
TiN 2nd pair	Nov 2011-Mar 2012	Samples from SLAC
Cu	Mar 2012-Jul 2012	OFC 101
Stainless steel	Aug 2012-Oct 2012	316-series
TiN 2nd pair	Oct 2012-Jan 2013	Recondition after air exposure
Al	**Jan 2013-**	**6063 alloy**
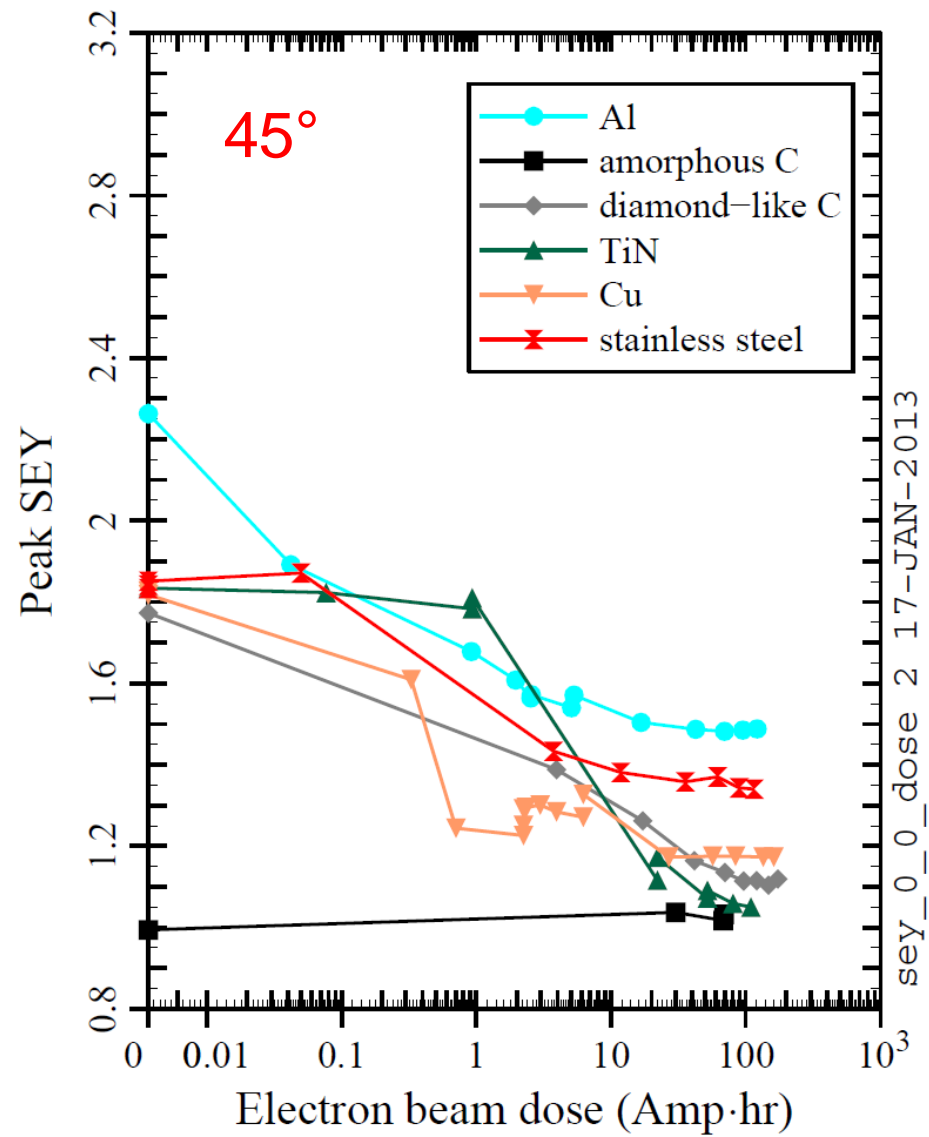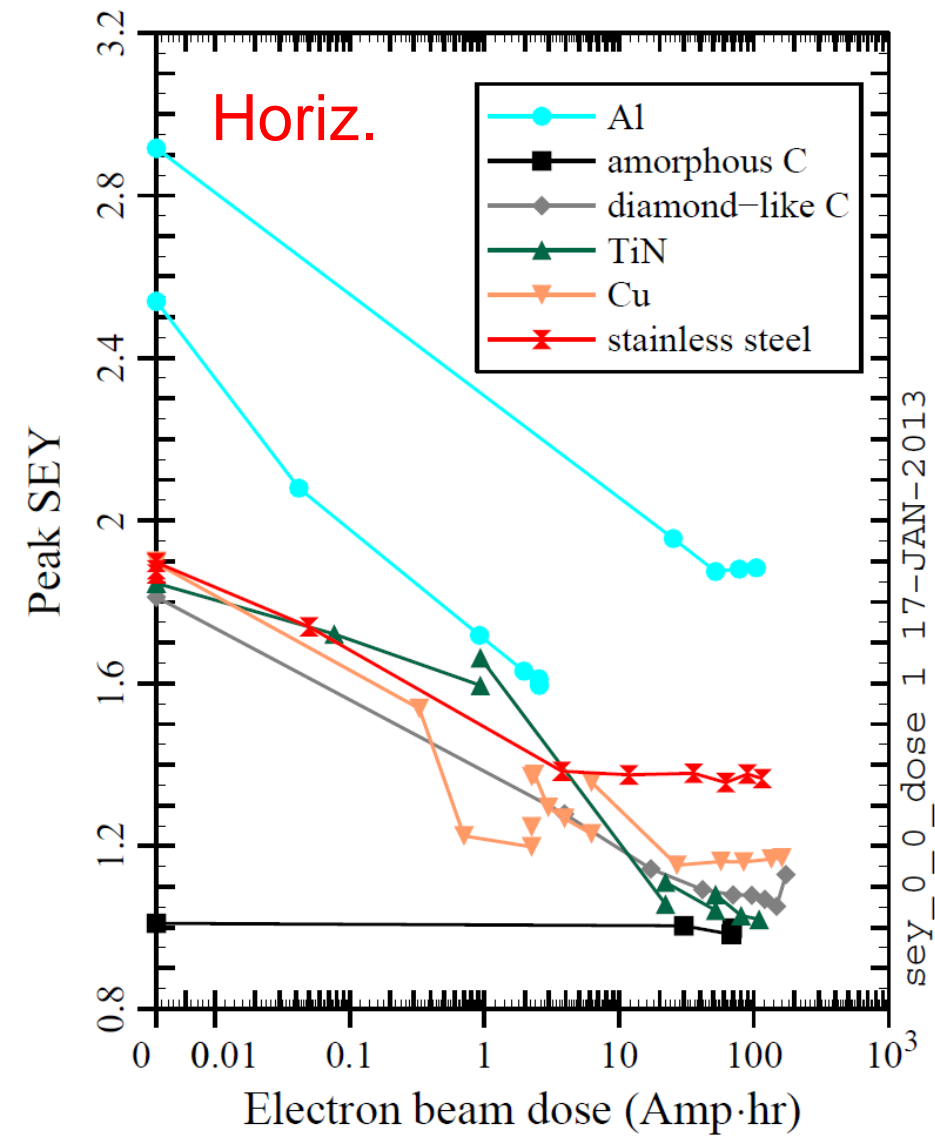
Beam conditioning of SEY samples (center, inc. angle = 25°)
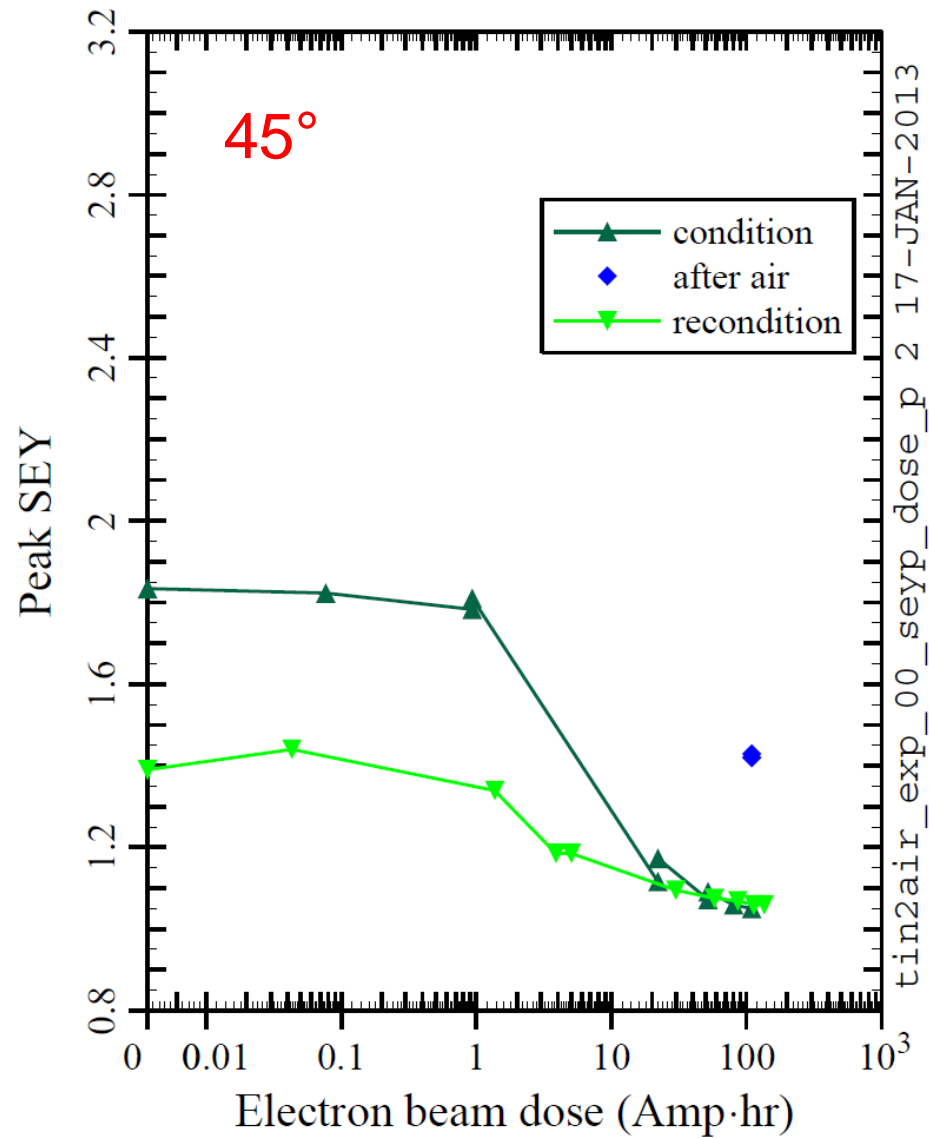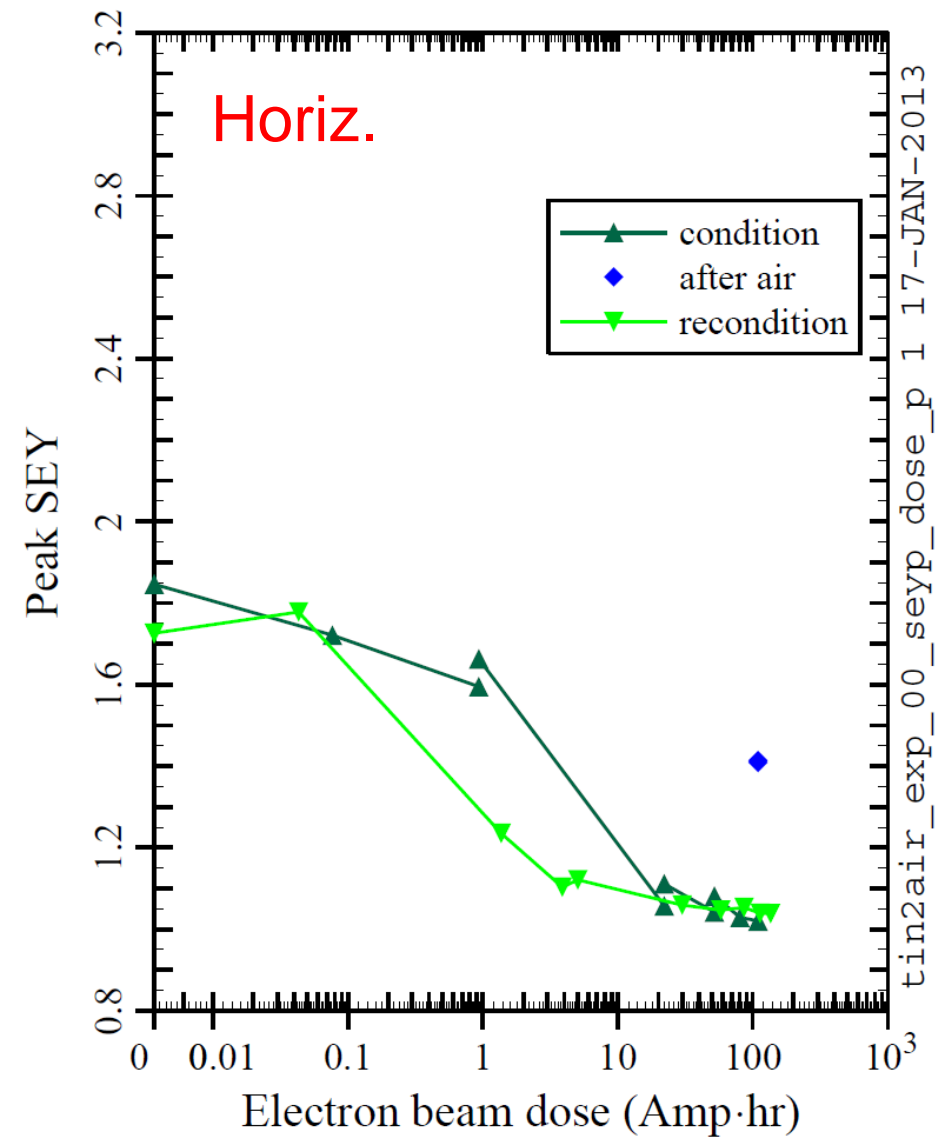
Conditioning vs reconditioning: TiN (center, inc. angle = 25°)

SEY vs energy after conditioning (center, inc. angle = 25°)

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Stainless steel

TiN after air exp.

Beam conditioning vs azimuth (inc. beam = 405 eV, 25°)

Work in progress/plans

– Monitor SEY vs time after conditioning, with samples in vacuum (done for Cu and reconditioned TiN)

– Remeasure SEY in Blue Room after exposure to air

– Interpret results so far; correct for systematic effects and connect measurements to SEY models, including SEY vs incident angle and SEY at low energy

– Near term: measure Al-6063, then new amorphous carbon samples