LASTI ETM
Coating characterization

CALTECH's Report

LMA Meeting, Lyon

October 19th, 2007

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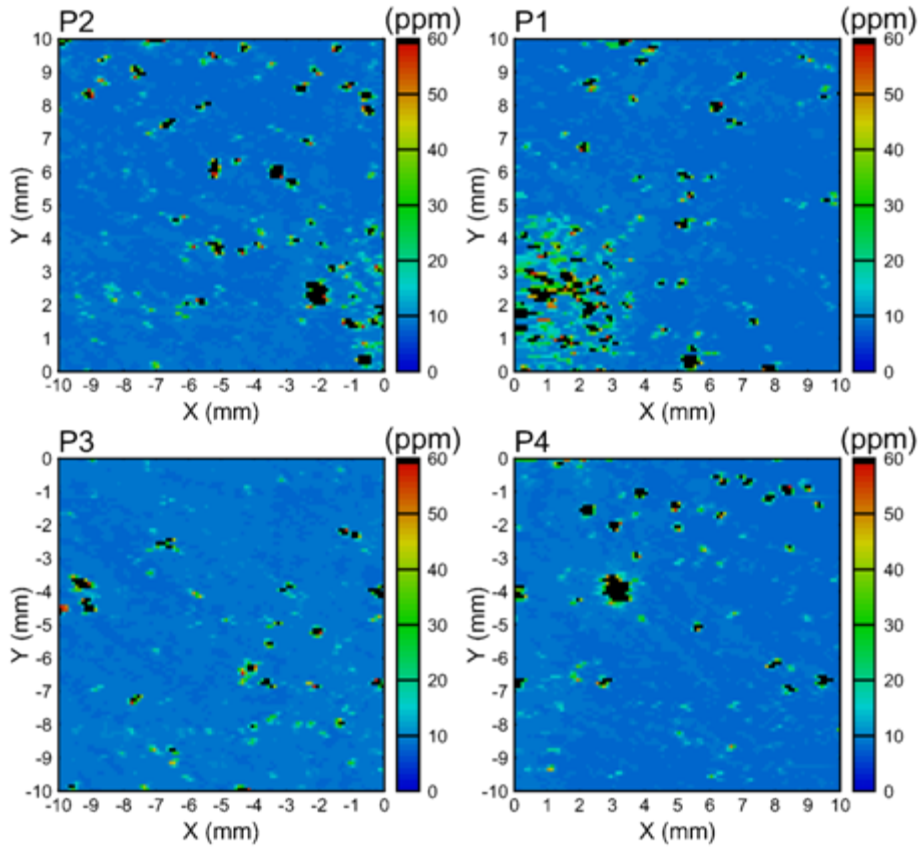
Coating Characterization at Caltech

SCATTER

HR side was measured on the RTS bench at Caltech by using a focused beam and an integrating sphere. The beam waist = 125 microns.The integrated polar angle range is from 1.5º to 78º,corresponding to a spatial bandwidth of 250 – 9200 cm-1.



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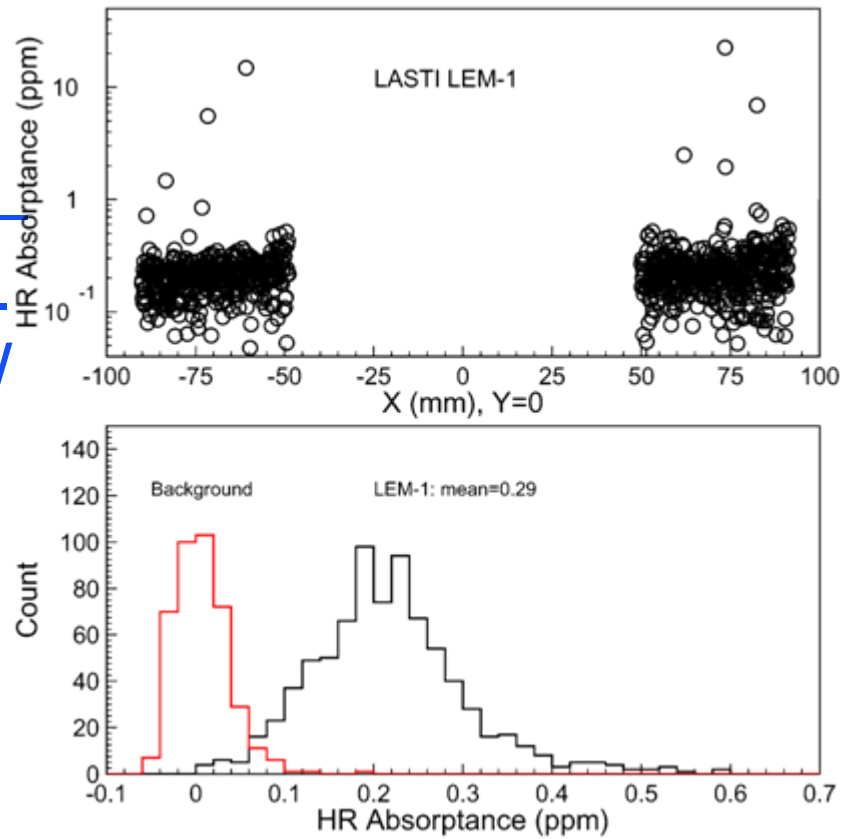
ABSORPTION

The HR coating absorption was measured on the RTS bench by using the photo-thermal common-path interferometer (PCI) method. The heating source is a 30 W CW Nd:YAG laser, and the probe beam from a He-Ne laser.

Measured absorption: 0.3±0.1 ppm.



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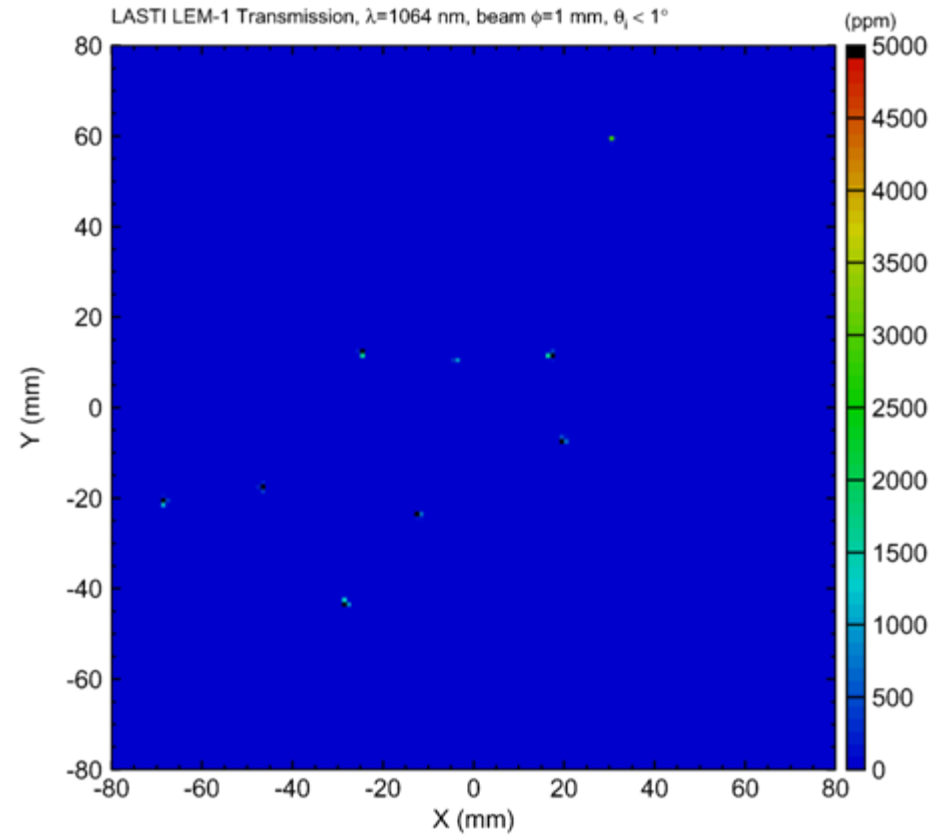
TRANSMISSION

The transmission was measured by using a collimated beam of 1 mm in diameter and an 1 mm scan step at the center part of 160 × 160 mm2. Transmission showed good uniformity

Found 9 high transmission points (bubbles)

The contribution of the points is about 1/3 of the overall average of transmission and is non-negligible.



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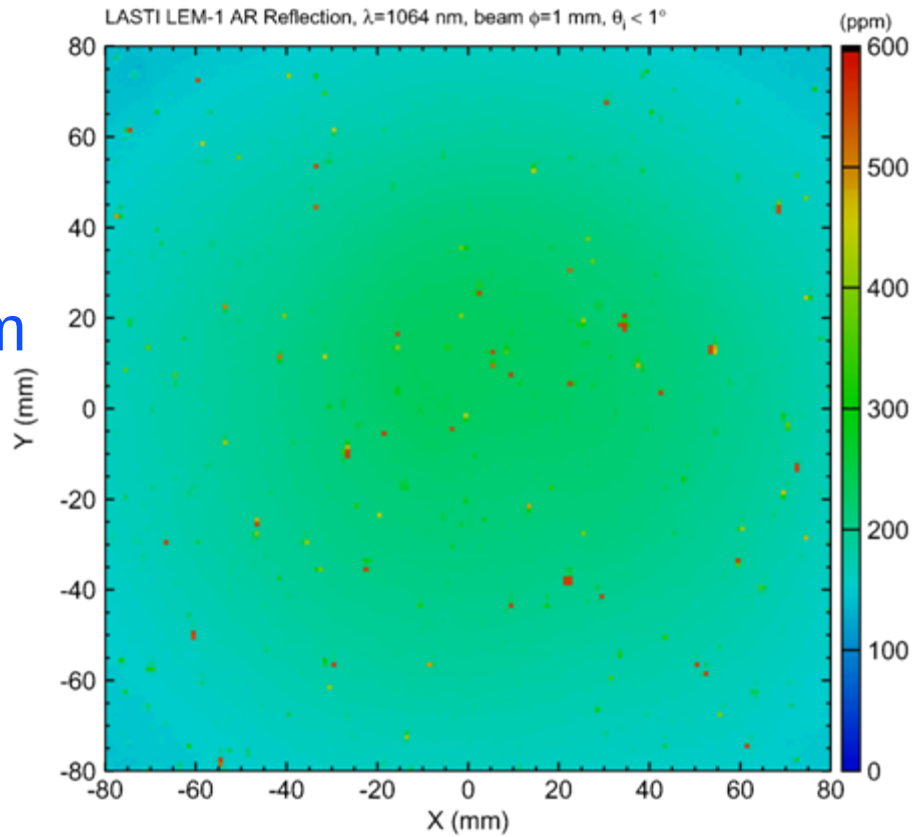
AR REFLECTION

The reflection of the AR coating was measured with a 1mm dia. collimated beam at the central part of 160 mm × 160 mm. The map shows 230 ppm at center, 160 ppm at edge and an average of 180 ppm.



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RESULTS

- The coating satisfied the LASTI coating requirements
- The absorption and scatter results were consistent with the measurements from LMA
- AR uniformity needs to be understood
- High transmission points (bubbles) need to be investigated