

Computertomography at a 10" feed pipe at an upflow hydrogenating reactor for hydrocarbons

CT-Device Construction and Function

The gamma ray source and the detector fan with 30 detectors are coupled to each other and carry out a rotation of 360° around the measurement object. The maximal object diameter is 1000 mm. The spatial resolution is 6 mm. The measuring data are represented as absorptions coefficients μ and are proportional to the density of the through-radiated device.



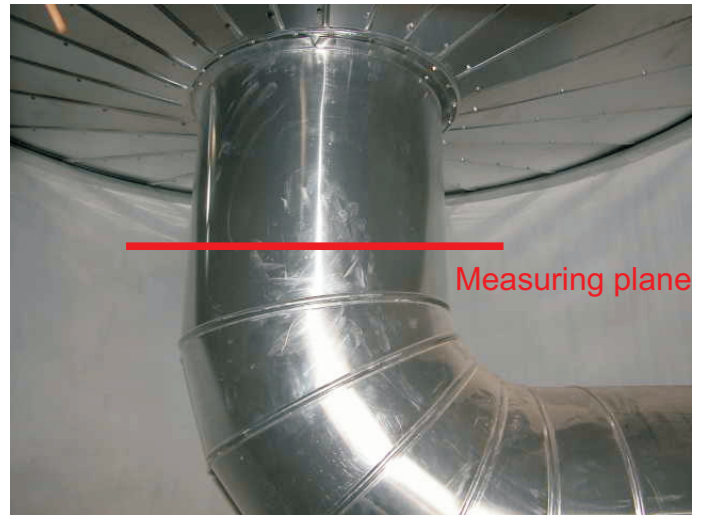
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Measuring point and construction

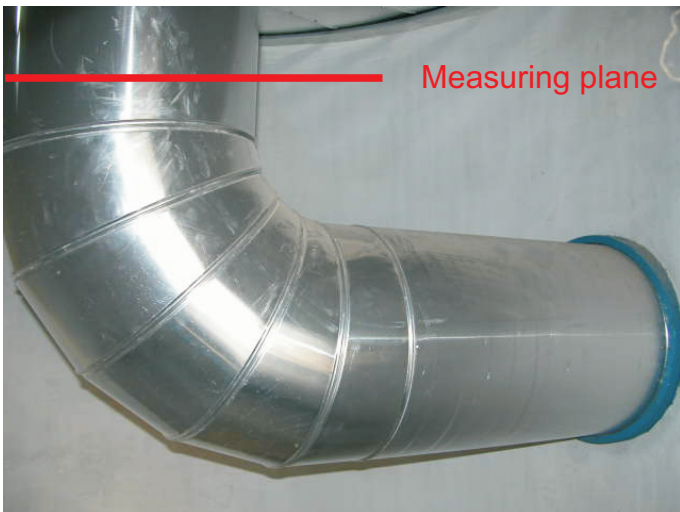
Skirt of the reactor with 10" feed pipe



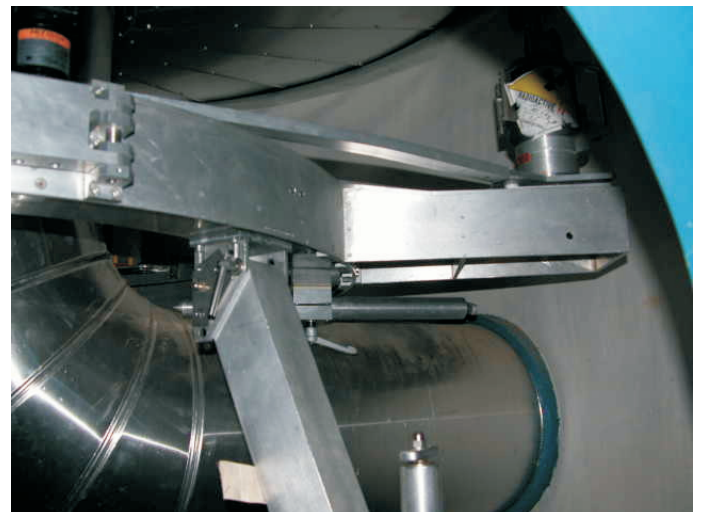
Measuring plane at the feed pipe



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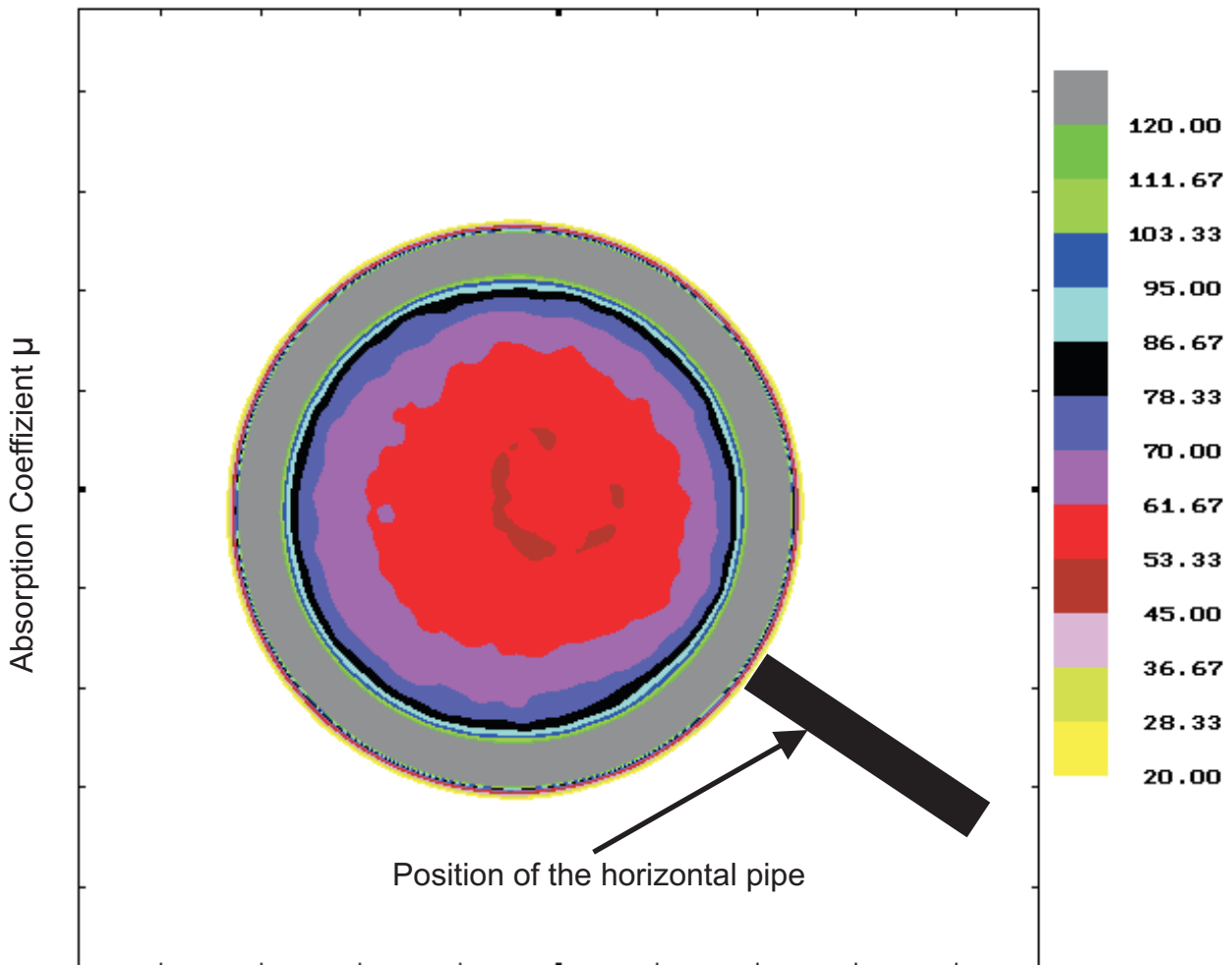
Setup of the CT-Device at the feed pipe



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Density allocation of the hydrocarbons (HC) and the hydrogen (H₂) into the vertical pipe, 2-D representation. Ratio of the mixture HC : Nm³ H₂ = 1 : 2,5

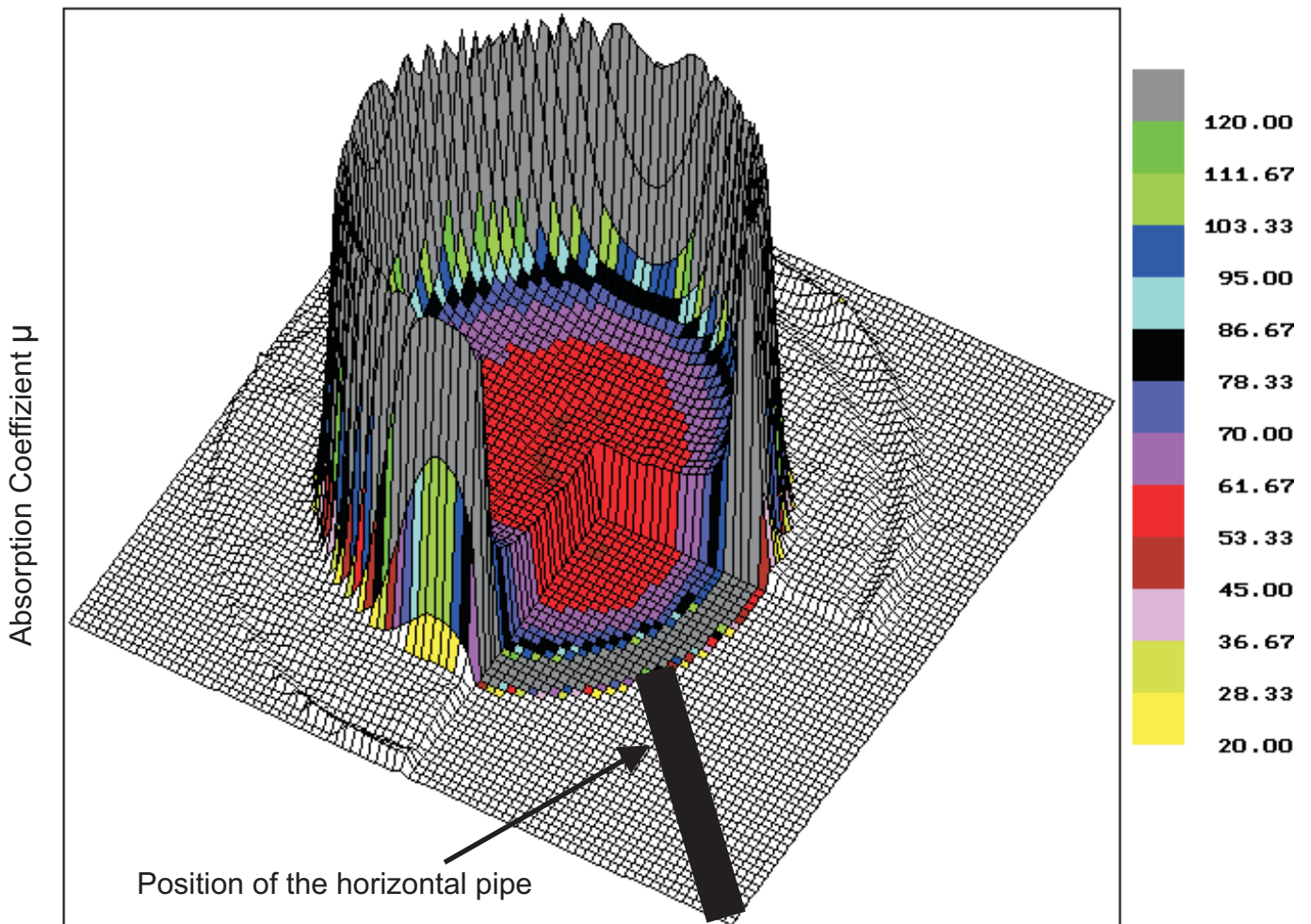
Result: **No** Maldistribution of H₂ at the inside elbow-side of the feed pipe



Computertomography at a 10" feed pipe at an upflow hydrogenating reactor for hydrocarbons

Density allocation of the hydrocarbons (HC) and the hydrogen (H₂) into the vertical pipe, 3-D representation. Ratio of the mixture HC : Nm³ H₂ = 1 : 2,5

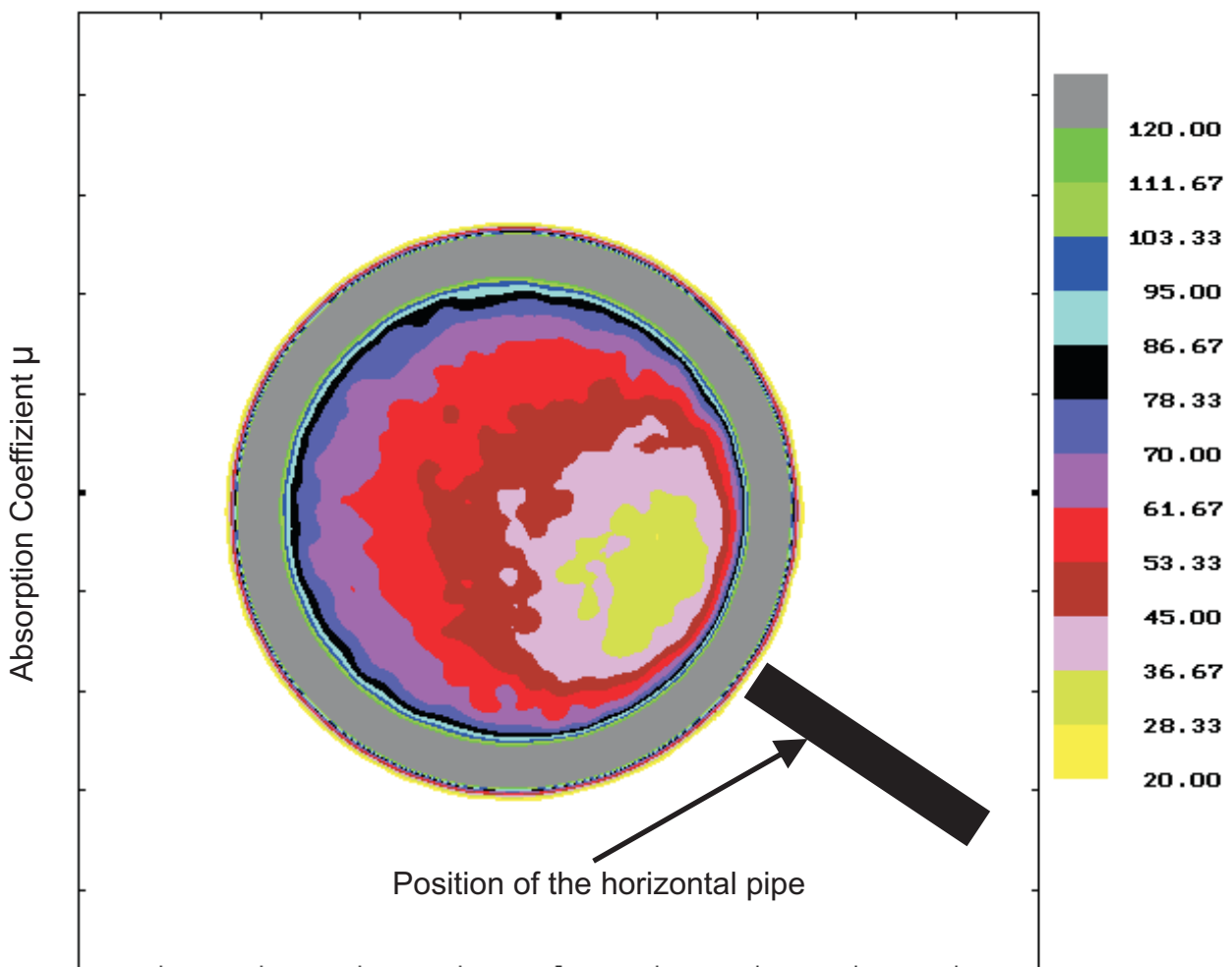
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