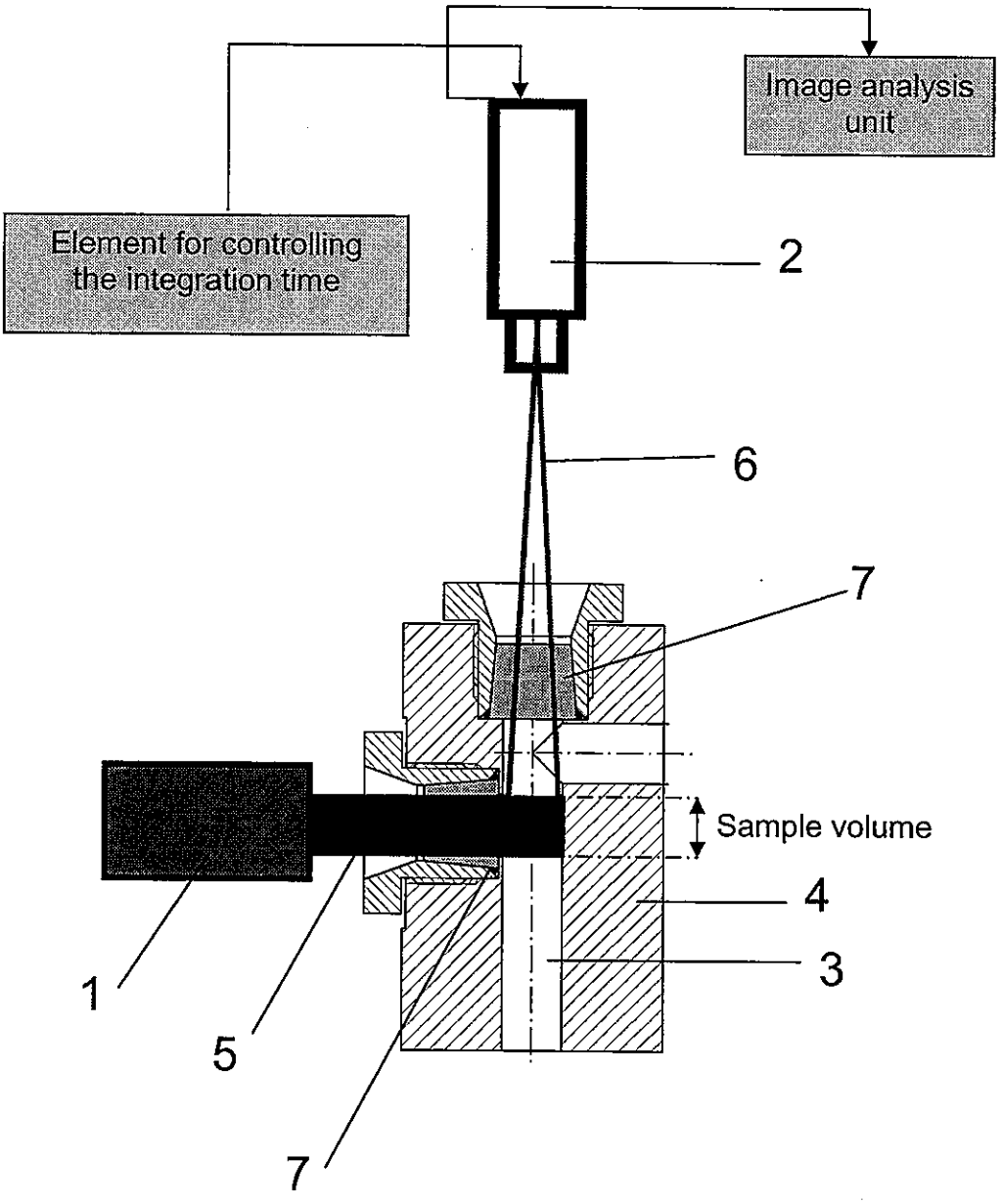

Image analysis unit
Element for controlling the integration time
2
6
7
Sample volume
4
3
1
5
7

Fig. 1

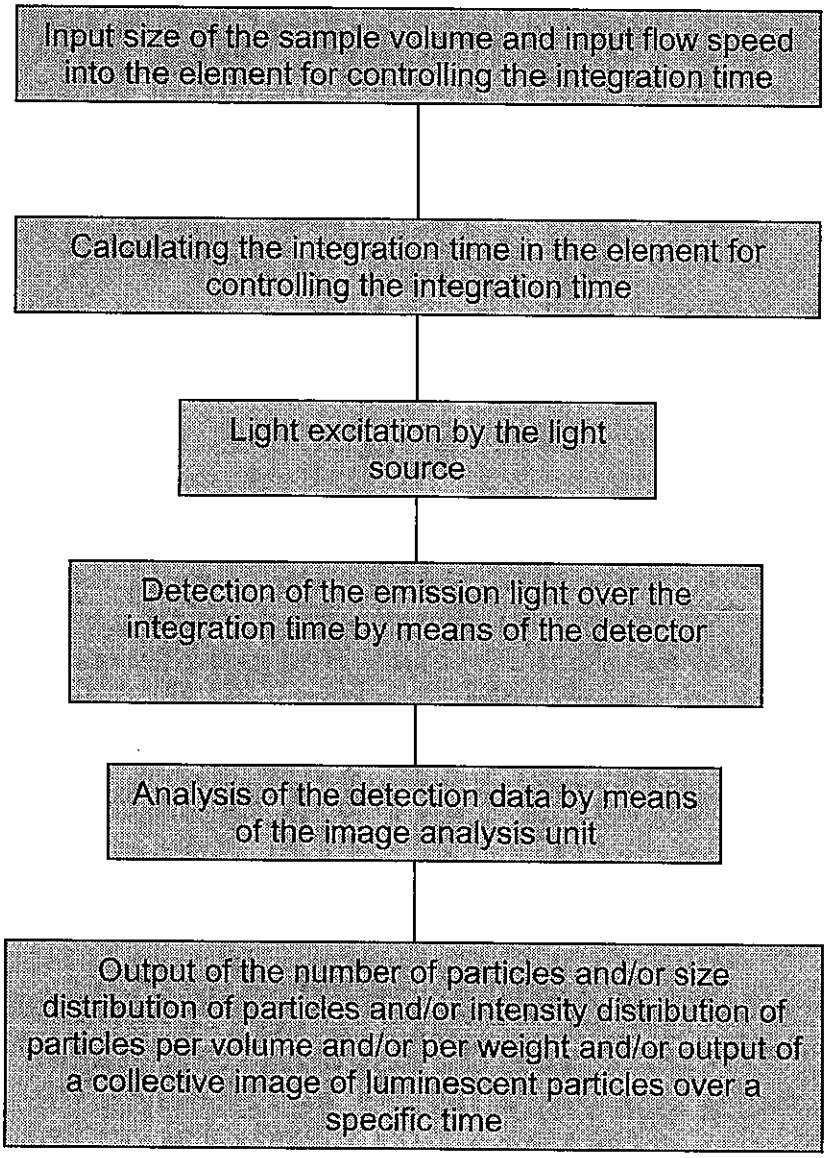

Input size of the sample volume and input flow speed into the element for controlling the integration time
Calculating the integration time in the element for controlling the integration time
Light excitation by the light source
Detection of the emission light over the integration time by means of the detector
Analysis of the detection data by means of the image analysis unit
Output of the number of particles and/or size distribution of particles and/or intensity distribution of particles per volume and/or per weight and/or output of a collective image of luminescent particles over a specific time

Fig. 2

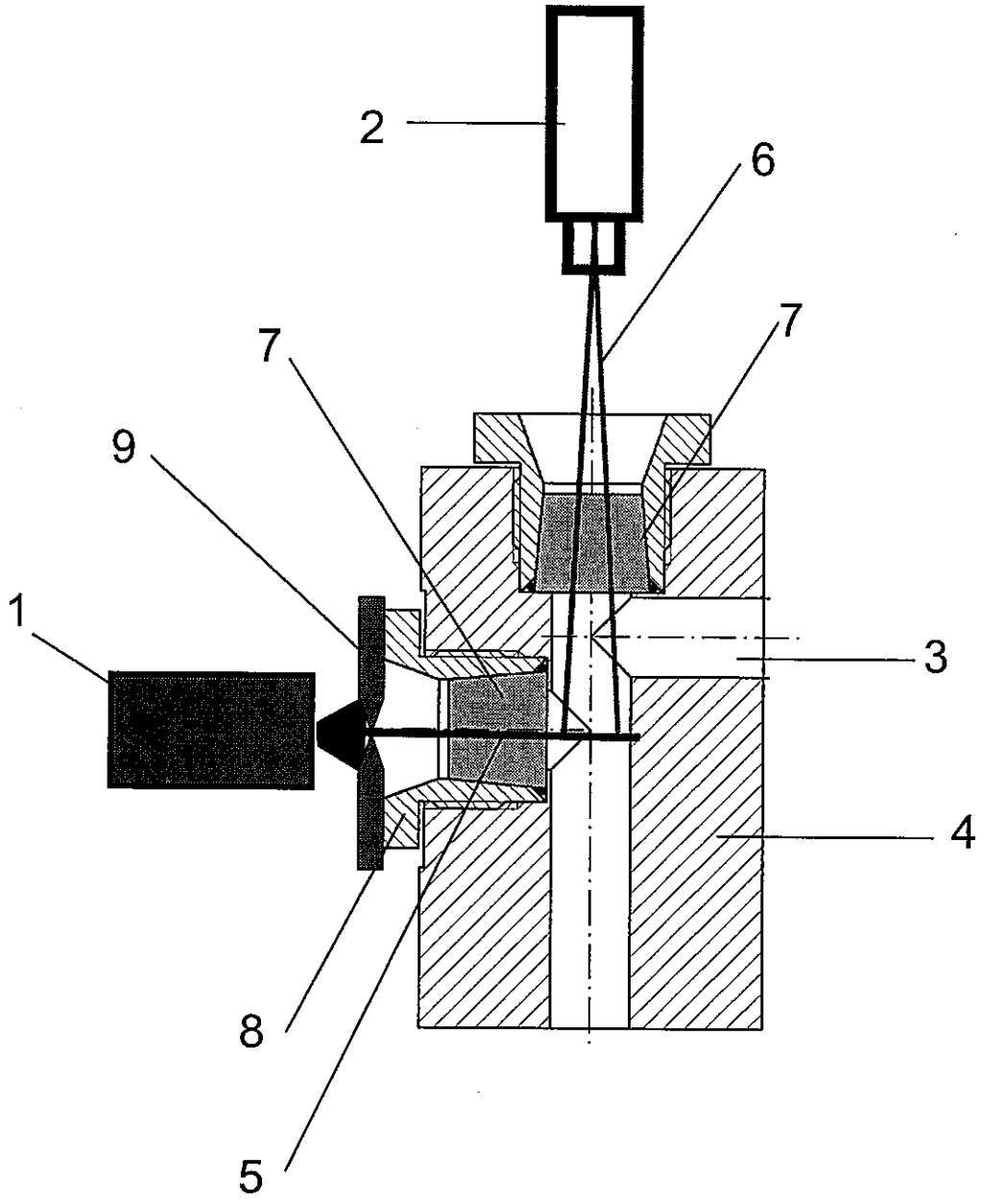


Fig. 3

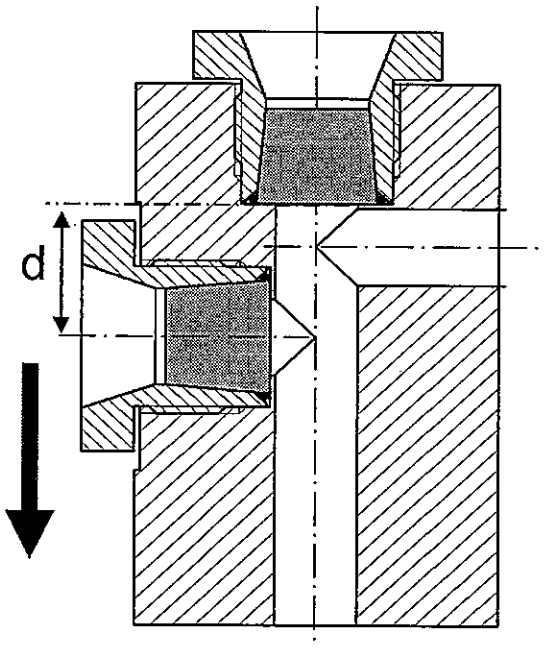


Fig. 4

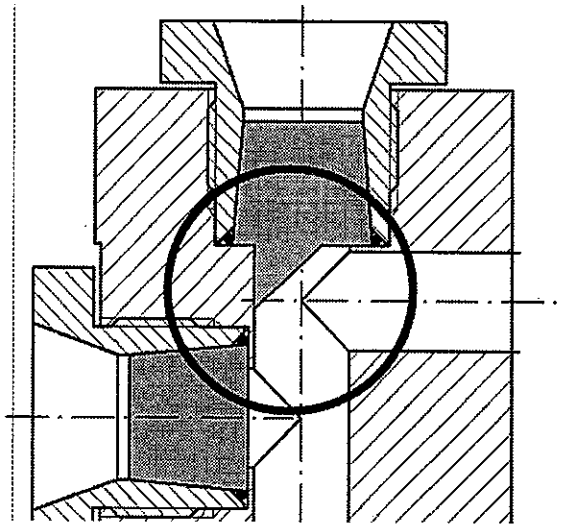


Fig. 5

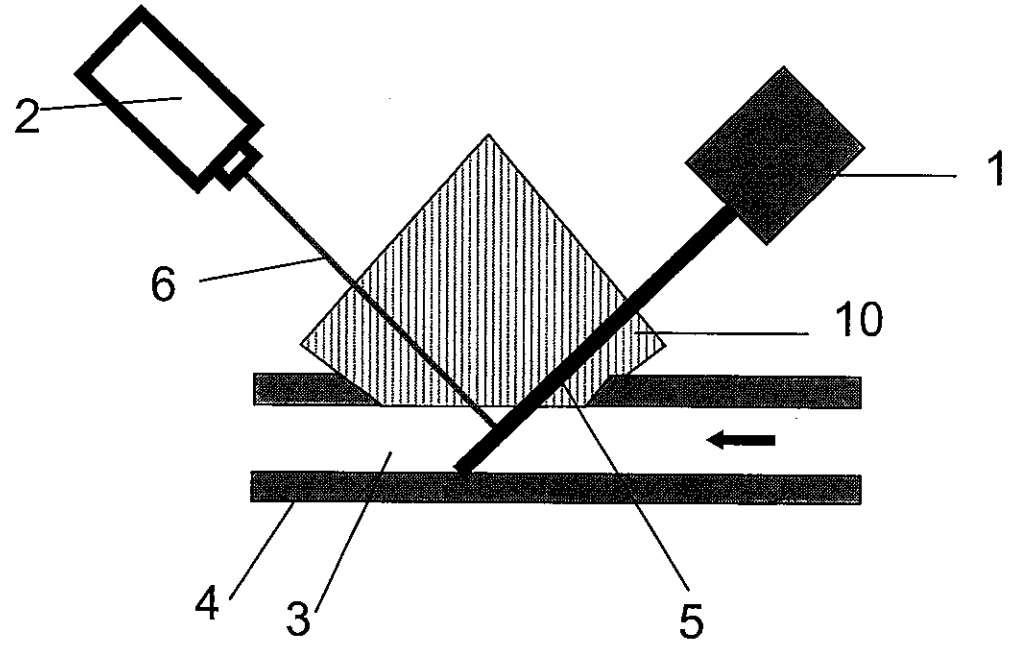


Fig. 6a

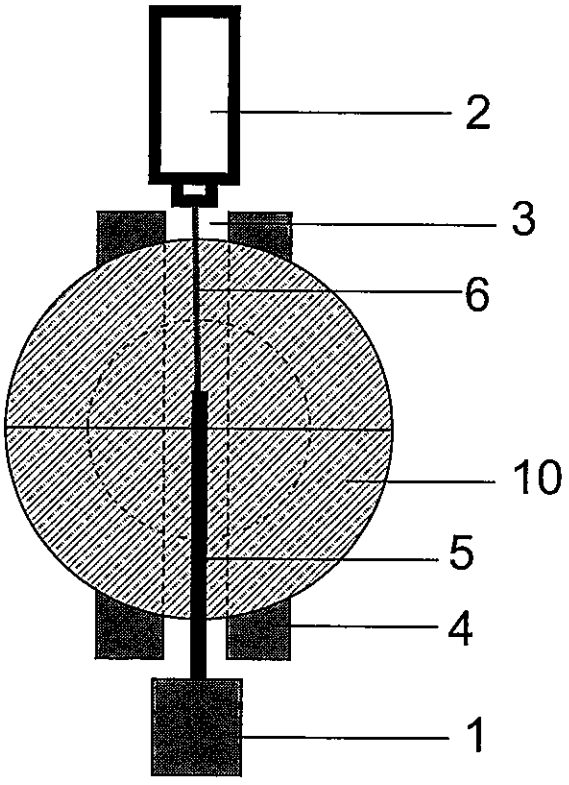


Fig. 6b

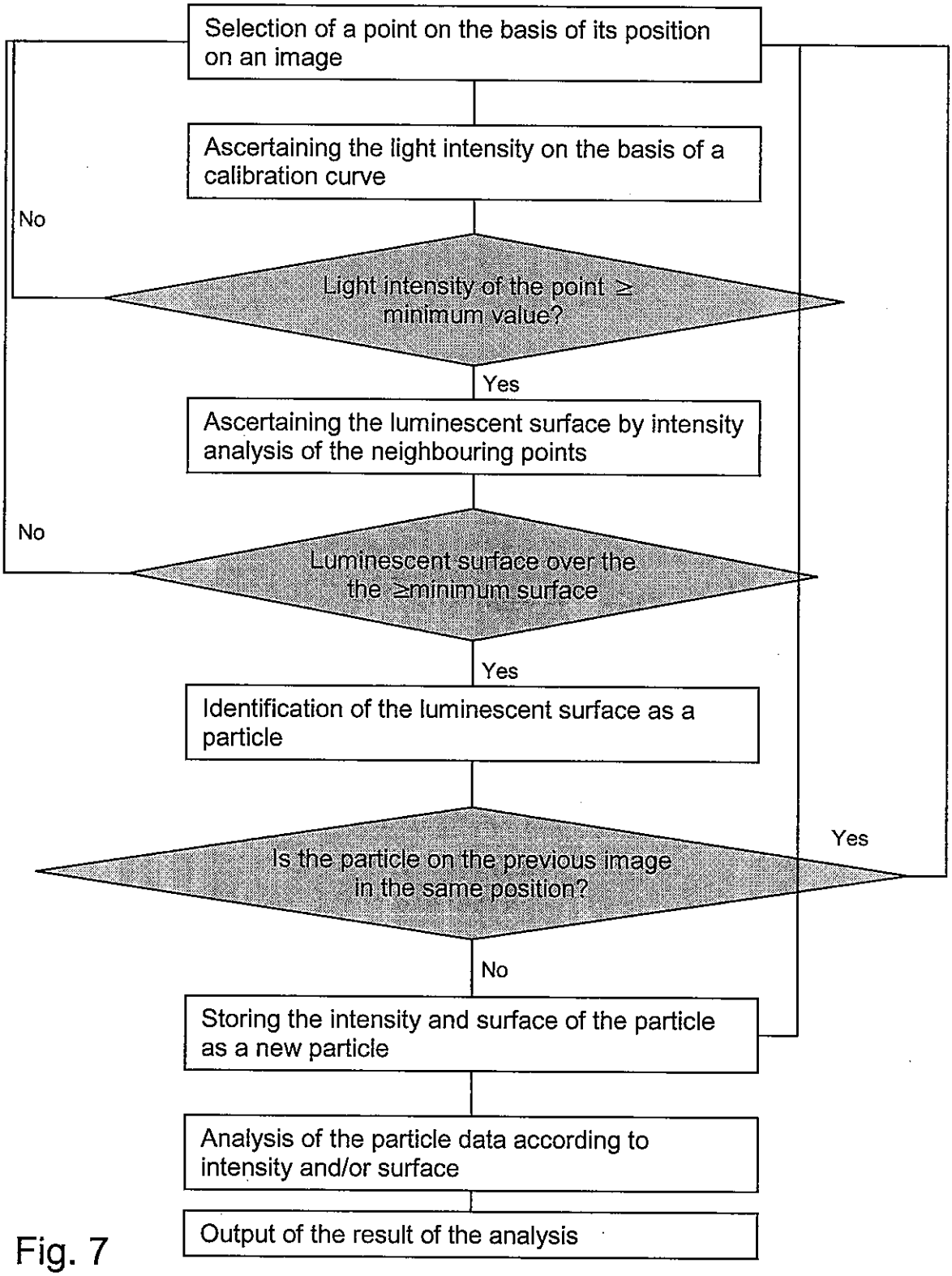

Selection of a point on the basis of its position on an image
Ascertaining the light intensity on the basis of a calibration curve
No
Light intensity of the point ≥ minimum value?
Yes
Ascertaining the luminescent surface by intensity analysis of the neighbouring points
No
Luminescent surface over the the ≥minimum surface
Yes
Identification of the luminescent surface as a particle
Is the particle on the previous image in the same position?
Yes
No
Storing the intensity and surface of the particle as a new particle
Analysis of the particle data according to intensity and/or surface
Output of the result of the analysis

Fig. 7

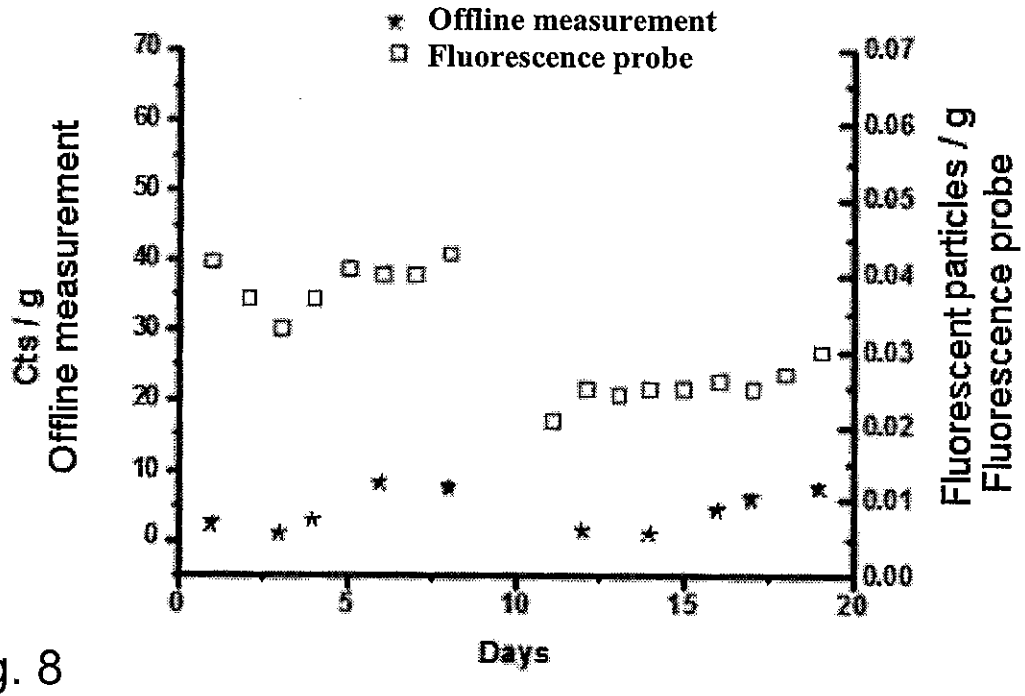

Offline measurement
Fluorescence probe
Cts / g
Offline measurement
Fluorescent particles / g
Fluorescence probe
Days
0
10
20
30
40
50
60
70
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0
5
10
15
20

Fig. 8

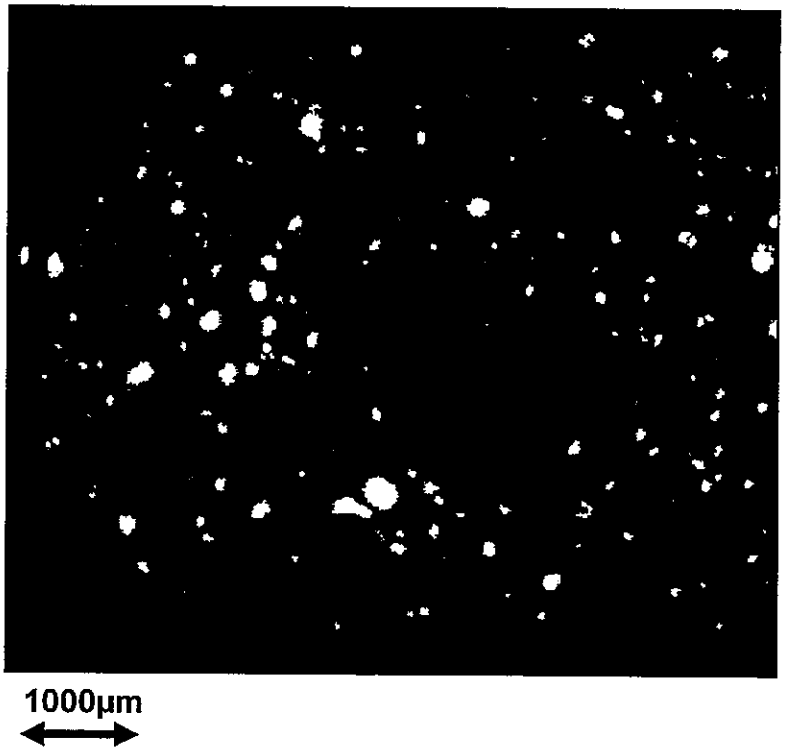


Fig. 9

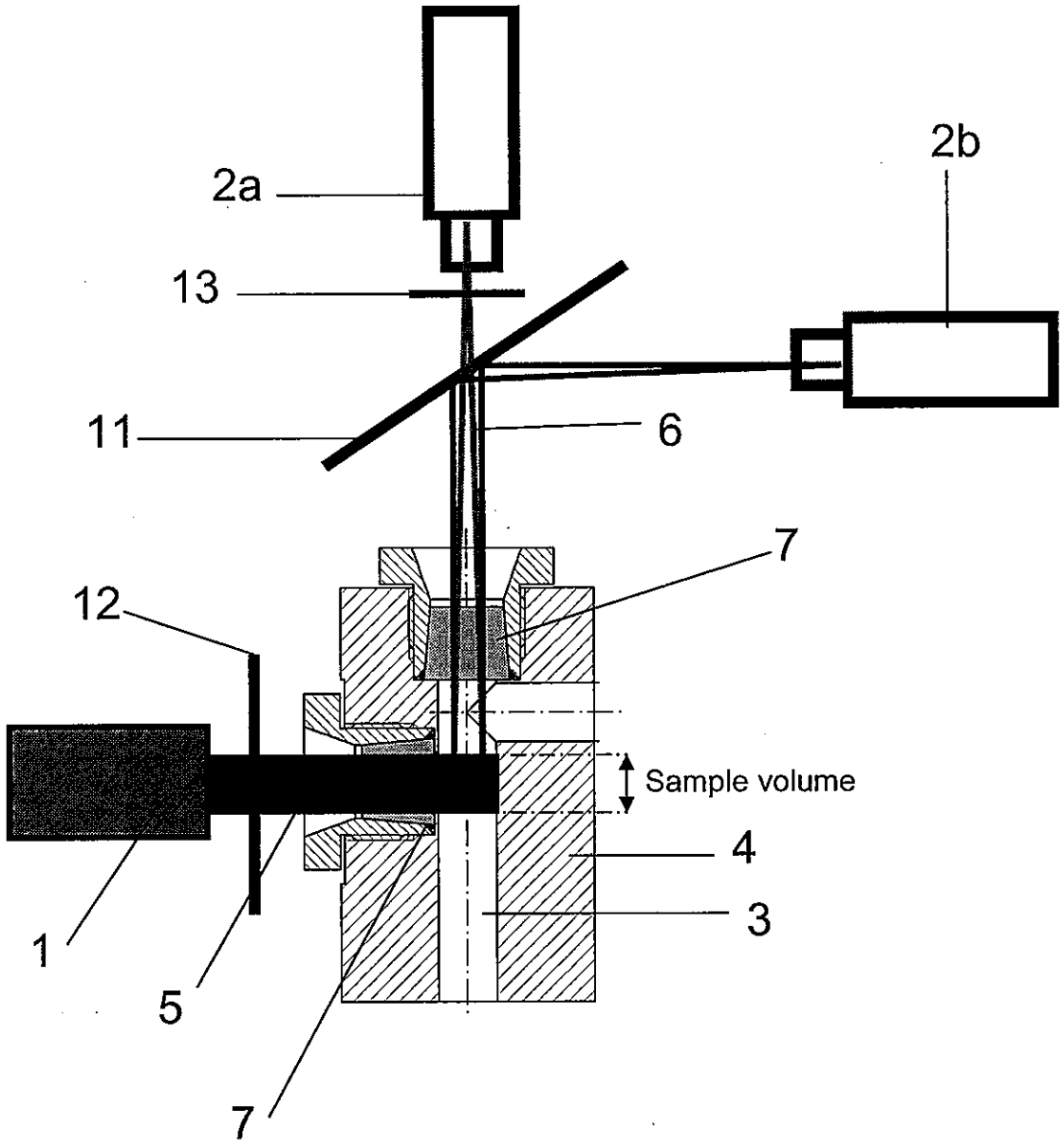


Fig. 10

5

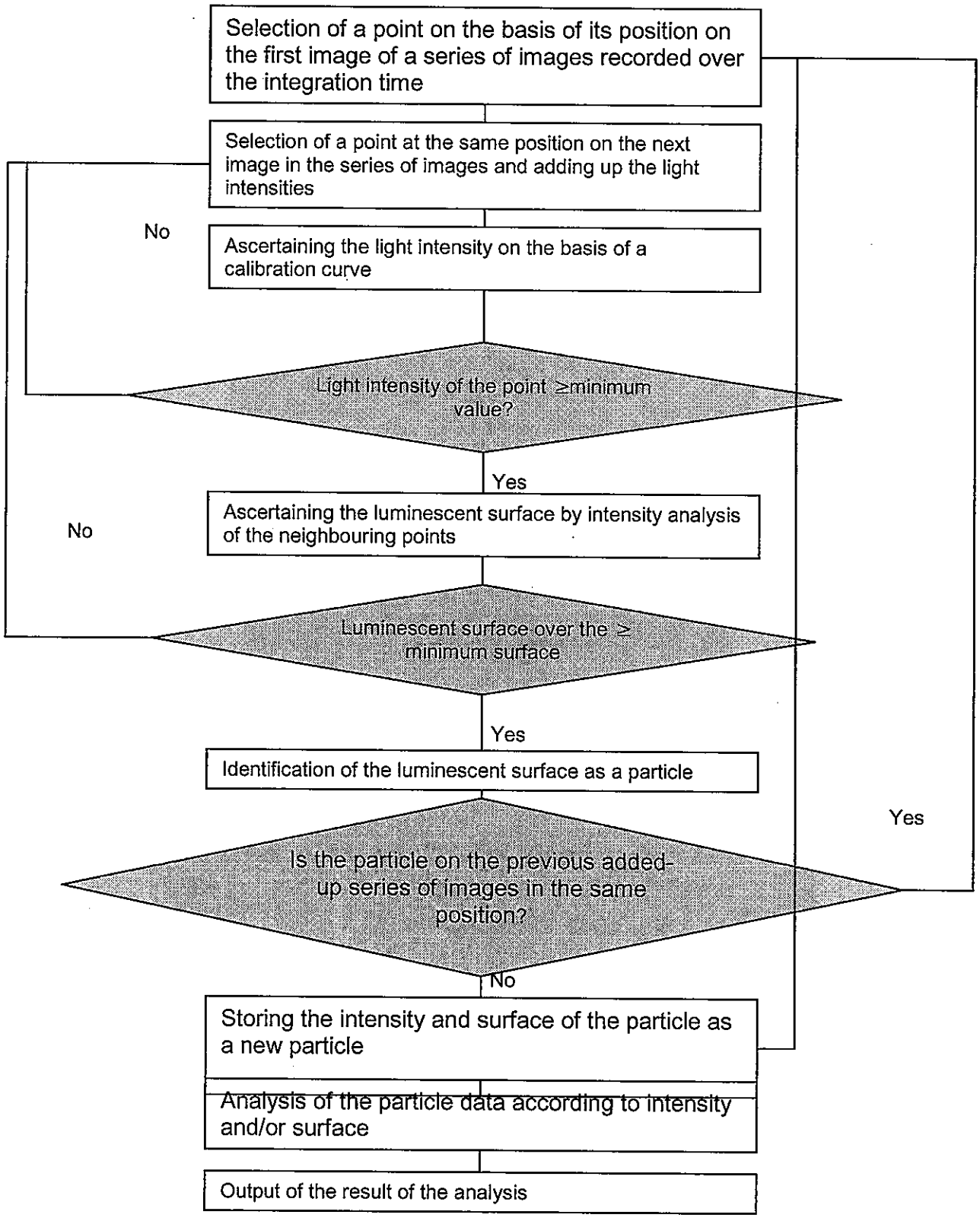

Selection of a point on the basis of its position on the first image of a series of images recorded over the integration time
Selection of a point at the same position on the next image in the series of images and adding up the light intensities
No
Ascertaining the light intensity on the basis of a calibration curve
Light intensity of the point ≥minimum value?
Yes
No
Ascertaining the luminescent surface by intensity analysis of the neighbouring points
Luminescent surface over the ≥ minimum surface
Yes
Identification of the luminescent surface as a particle
Yes
Is the particle on the previous added-up series of images in the same position?
No
Storing the intensity and surface of the particle as a new particle
Analysis of the particle data according to intensity and/or surface
Output of the result of the analysis

Fig. 11