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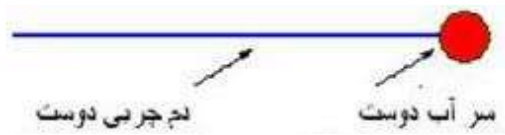
\*. Email: [farhadh\\_sad@ut.ac.ir](mailto:farhadh_sad@ut.ac.ir)

(Lin et al., 2006)

(Hughton et al., 2001)

(Murphy et al., 2006)

( )



(Fahri et al., 1999, 2000)

(Sinouit and Oros, 2000)

(Mehida et al., 2002)

(Kiss et al., 2005)

(Tazariuk and Dina, 2006)

(Hughton et al.,

% 2001)

(Hibs et al., 1970)

(Koene et al., 2005) %

1 Aerosols  
3 Surface active agent

2 Cloud condensation nuclei



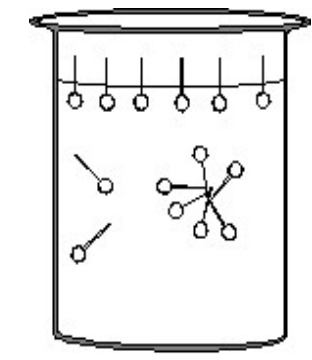
$$G_t = G_0 \frac{4}{3} r^3 \frac{R}{r} \ln\left(\frac{e}{e_0}\right) \quad (1)$$

$$G_t(r) = G_0 r^3 r^2 \quad (2)$$

$$a = \frac{2}{3} \frac{2}{R \ln\left(\frac{e}{e_0}\right)} \quad (3)$$

(Wallace and Hibbs 2009)

$$V = \frac{2g r^2}{9} \quad (4)$$



( )

(Gill et al., 1983)

- 1 Middle
- 3 Methylglyoxal
- 5 Acetaldehyde
- 7 Gibbs

- 2 Carboxylic
- 4 Formaldehyde
- 6 Amine functional groups
- 8 Stearic acid

$$\frac{dP}{T} = \frac{RdP}{\rho P}$$

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(ppm / / /)

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$$\frac{e}{e_s} = 1 - 100$$

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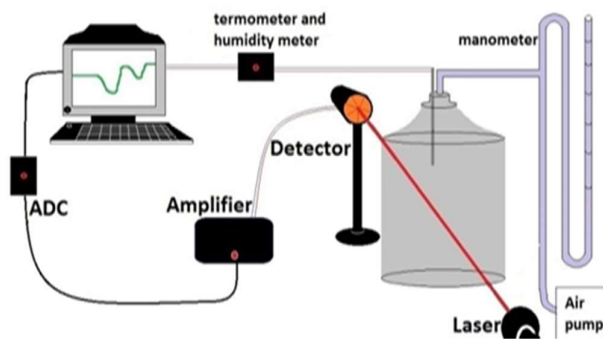
, ppm

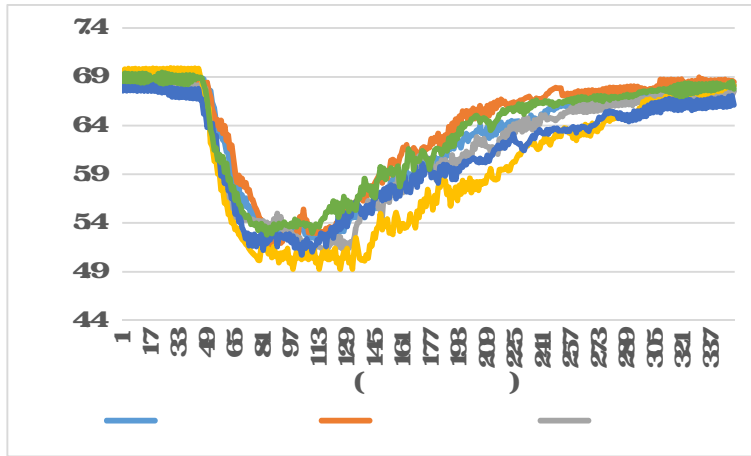
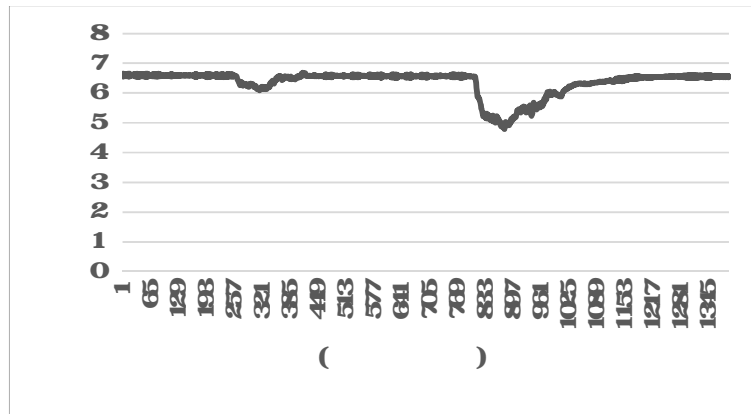
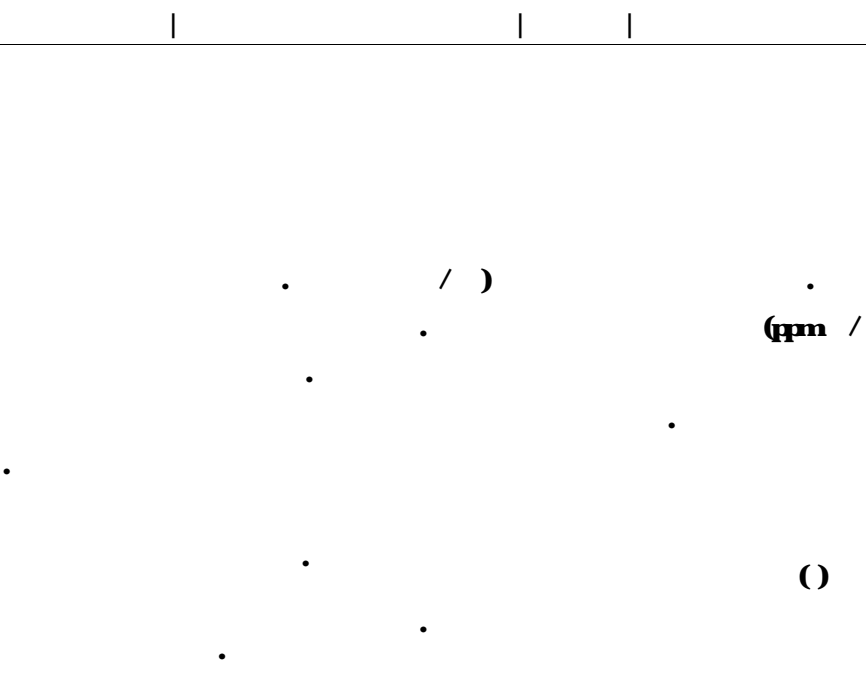
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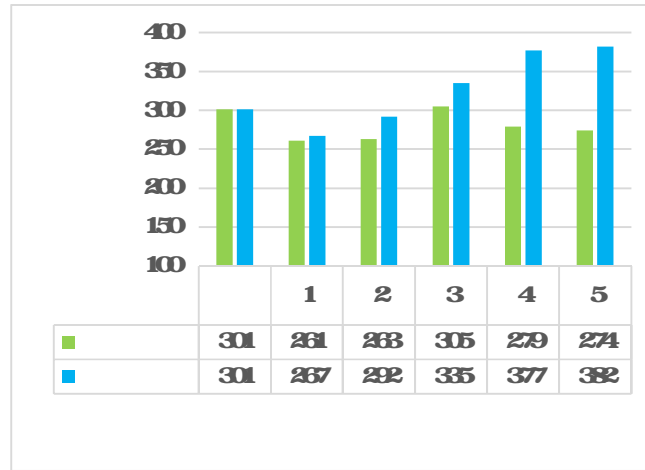
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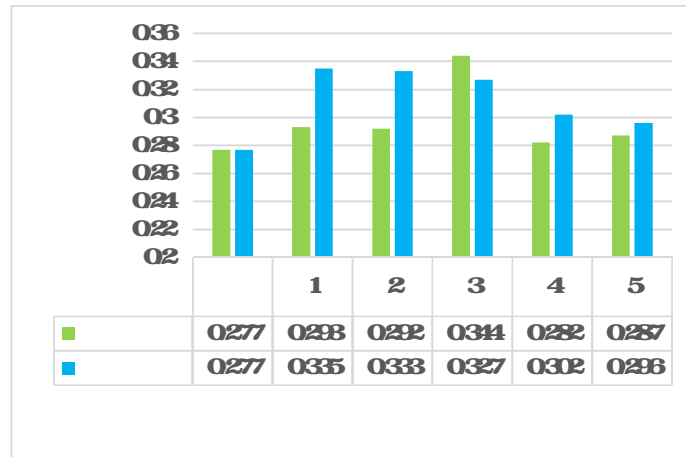






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( , ppm) ( ppm)



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