Electronic Supplementary Information

Interaction of L-alanyl-L-valine and L-valyl-L-alanine with organic vapors: thermal stability of clathrates, sorption capacity and change of morphology of dipeptide films

Marat A. Ziganshin,\textsuperscript{a,*} Nadezhda S. Gubina,\textsuperscript{a} Alexander V. Gerasimov,\textsuperscript{a} Valery V. Gorbatchuk,\textsuperscript{a} Sufia A. Ziganshina,\textsuperscript{b} Anton P. Chuklanov\textsuperscript{b} and Anastas A. Bukharaev\textsuperscript{b}

\textsuperscript{a} A.M. Butlerov Institute of Chemistry, Kazan Federal University, Kremlevskaya 18, Kazan, 420008 Russia, E-mail: Marat.Ziganshin@kpfu.ru
\textsuperscript{b} Kazan Zavoisky Physical-Technical Institute of the Kazan Scientific Center of the Russian Academy of Sciences, Sibirskii trakt 10/7, Kazan, 420029 Russia

QCM data for successive sensor experiments; TG/DSC/MS data for the studied dipeptides and products of their saturation with guest vapors; AFM images of the surface of thin film of dipeptide saturated with vapors.
Figure 1S – The successive responses of QCM sensor coated with dipeptide AV to vapor of carbon tetrachloride. Before the second binding sensors were dried for 2 min by hot air (45°C).

Figure 2S – The successive responses of QCM sensor coated with dipeptide AV to vapor of water. Before the second binding sensors were dried for 2 min by hot air (45°C).
Figure 3S – The successive responses of QCM sensor coated with dipeptide VA to vapor of pyridine. Before the second binding sensors were dried for 2 min by hot air (45°C).

Figure 4S – The successive responses of QCM sensor coated with dipeptide VA to vapor of ethanol. Before the second binding sensors were dried for 2 min by hot air (45°C).
Figure 5S – The data of TG/DSC/MS analysis for dipeptide AV.

Figure 6S – The data of TG/DSC/MS analysis for dipeptide VA.
Figure 7S – The data of TG/DSC/MS analysis for product of AV saturation with vapor of acetonitrile. Ion thermogram of CH₃CN (m/z=41) is shown. Heating rate is 10 K/min.

Figure 8S. The data of TG/DSC/MS analysis for product of VA saturation with vapor of acetonitrile. Ion thermogram of CH₃CN (m/z=41) is shown. Heating rate is 10 K/min.
Figure 9S – The data of TG/DSC/MS analysis for product of AV saturation with vapor of nitromethane. Ion thermogram of CH₃NO₂ (m/z=61) is shown. Heating rate is 10 K/min.

Figure 10S – The data of TG/DSC/MS analysis for product of VA saturation with vapor of nitromethane. Ion thermogram of CH₃NO₂ (m/z=61) is shown. Heating rate is 10 K/min.
Figure 11S – The data of TG/DSC/MS analysis for product of AV saturation with vapor of ethanol. Ion thermogram of C$_2$H$_5$OH (m/z=46) is shown. Heating rate is 10 K/min.

Figure 12S – The data of TG/DSC/MS analysis for product of VA saturation with vapor of ethanol. Ion thermogram of C$_2$H$_5$OH (m/z=46) is shown. Heating rate is 10 K/min.
Figure 13S – The data of TG/DSC/MS analysis for product of AV saturation with vapor of methylene chloride. Ion thermogram of CH$_2$Cl$_2$ (m/z=84) is shown. Heating rate is 10 K/min.

Figure 14S – The data of TG/DSC/MS analysis for product of VA saturation with vapor of methylene chloride. Ion thermogram of CH$_2$Cl$_2$ (m/z=84) is shown. Heating rate is 10 K/min.
Figure 15S – The data of TG/DSC/MS analysis for product of VA saturation with vapor of chloroform. Ion thermogram of CHCl₃ (m/z=85) is shown. Heating rate is 10 K/min.

Figure 16S – The data of TG/DSC/MS analysis for product of AV saturation with vapor of chloroform. Ion thermogram of CHCl₃ (m/z=85) is shown. Heating rate is 10 K/min.
Figure 17S – AFM image of the surface of AV film saturated with vapors of nitromethane for 75 min, T=298K.

Figure 18S – AFM image of the surface of VA film saturated with vapors of water for 20 min, T=298K.
Figure 19S – AFM image of the surface of AV film saturated with vapors of \( n \)-hexane for 1 h, \( T=298K \).

Figure 20S – AFM image of the surface of VA film saturated with vapors of \( n \)-hexane for 2 h, \( T=298K \).
Figure 21S – AFM image of the surface of initial film of AV deposited on HOPG from a methanol solution before saturation with vapors of methylene chloride, T=298K.

Figure 22S – AFM images of the surface of VA film saturated with vapors of methylene chloride for 75 min. Images are obtained in topography mode (left) and in phase contrast mode (right), T=298K.
Figure 23S – AFM image of the surface of VA film saturated with vapors of chloroform for 60 min, T=298K.