

Abstract Submitted  
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**The mechanism of alcoholic beverage induced superconductivity in Fe-chalcogenide compounds** KEITA DEGUCHI, SATOSHI DEMURA, HIROYUKI OKAZAKI, SALEEM DENHOLME, MASAYA FUJIOKA, TOSHINORI OZAKI, TAKAHIDE YAMAGUCHI, HIROYUKI TAKEYA, YOSHIHIKO TAKANO, National Institute for Materials Science — We have clarified the mechanism of alcoholic beverage induced superconductivity in Fe-chalcogenide compounds. Previously we reported that the bulk superconductivity in Fe-based compounds Fe(Te, Se) and Fe(Te, S) is achieved by heating in alcoholic beverages [1,2]. However, the exact mechanism of how they act to enhance the superconductivity in the compounds remains unsolved. To understand the effect of alcoholic beverage treatment, we investigated the mechanism using a technology of metabolomic analysis [3]. We found that weak acid in alcoholic beverages has the ability to deintercalate the excess Fe, which is not in favor of superconductivity. In this presentation, we will discuss the systematic mechanism to induce superconductivity in Fe-chalcogenide compounds. [1] K. Deguchi et al., Supercond. Sci. Technol. 24 (2011) 055008. [2] K. Deguchi et al., arXiv: 1210.5889. [3] K. Deguchi et al., Supercond. Sci. Technol. 25 (2012) 084025.

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