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Controlling the Degree of Hydrophilicity/Hydrophobicity of Semiconductor Surfaces Via Porosification and Metal Deposition

E.V. Monaico¹, S. Busuioc¹ and I.M. Tiginyanu^{1,2}

¹ *Technical University of Moldova, National Center for Materials Study and Testing, Stefan cel Mare av. 168, MD-2004, Chisinau, Republic of Moldova*

² *Academy of Sciences of Moldova, Stefan cel Mare av. 1, MD-2001, Chisinau, Republic of Moldova*

In this paper we present a systematic study of bulk GaAs wafers and gold-decorated GaAs surfaces exhibiting hydrophilic and hydrophobic behaviors. The wetting properties can be switched to superhydrophilicity and superhydrophobicity by simple electrochemical etching providing engineered porous morphologies. The results open interesting technological perspectives for the exploitation of GaAs surfaces.