

Institut für Theoretische Physik IV

Prof. Dr. R. Bausch



Universitätsstr. 1  
Gebäude 25.32  
D-40225 Düsseldorf

Tel.: (0211) 81-14682

Fax: (0211) 81-15630

E-Mail:

bausch@thphy.uni-duesseldorf.de

Theoretische Physik, Universitätsstr. 1, D-40225 Düsseldorf

Biocomplexity Faculty Search Committee,  
c/o Professor Rob de Ruyter van Steveninck,  
Biocomplexity Institute, Indiana University  
Swain Hall West 117,  
Bloomington, IN 47405-7105,  
**USA**

01/12/2004

Dear colleague,

enclosed find a hard copy of my letter of recommendation for Dr. Alexei Boulbitch.

Yours sincerely

*R. Bausch*

Richard Bausch

## Letter of recommendation for

### Dr. Alexei A. Boulbitch

Out of the very broad spectrum of scientific interests and activities of Dr. Boulbitch I am primarily familiar with his papers on the dynamic behavior of extended elastic defects close to a phase transition of the host material. Already without such a transition the driven motion of such defects is of basic interest, since it is responsible for the behavior of plastic materials.

The existence of a phase transition in the bulk can already in the high-temperature phase initiate the formation of nuclei of the low-temperature phase at the defects which leads to friction effects of the defect motion. As shown in several pioneering papers by Dr. Boulbitch, the nuclei can, depending on the order of the transition, be localized at the defects or they can form a trail behind the defects. Whereas in the former case the friction force is of a viscous type, an apparent dry-friction force arises in the latter case. Another important and remarkable result of the research of Dr. Boulbitch is the existence of a well-defined limiting velocity of the defects, above which there is no time for the formation of a nucleus.

The related papers, discussed only briefly here, have a very original character and are of high scientific quality. They have found considerable interest in physics and material science, and they have led to new developments, also in our own group. It was natural, therefore, to invite Dr. Boulbitch, for a talk at the University of Düsseldorf which turned out to be excellent and complemented by his substantial and illuminating contributions in the subsequent discussion. It also should be mentioned that, during his visit, we all enjoyed his pleasant and humorous personality.

Generally, Dr. Boulbitch is a very experienced scientist with remarkable teaching abilities. He is creative, has original ideas, and has repeatedly proved his ability to work independently. Simultaneously he is used to work in a team which actually is the case in his present position in Munich. His activities in Munich concern problems in the field of biochemistry which also was the object of his habilitation thesis. This successful change of his research activities also proves his general scientific flexibility. Altogether, I am confident that Dr. Boulbitch again would quickly adjust to a new area of research, and I have no doubt that he would be a very good choice for the position in question.