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Rostock, April 10, 2015

To: Dissertation Defence Council
Scientific Secretary Dr. N. N. Syutkin
Institute of Electrophysics
620016 Yekaterinburg, Russia
tor@iep.uran.ru

Ref: Dr. Grey Sh. Boltachev

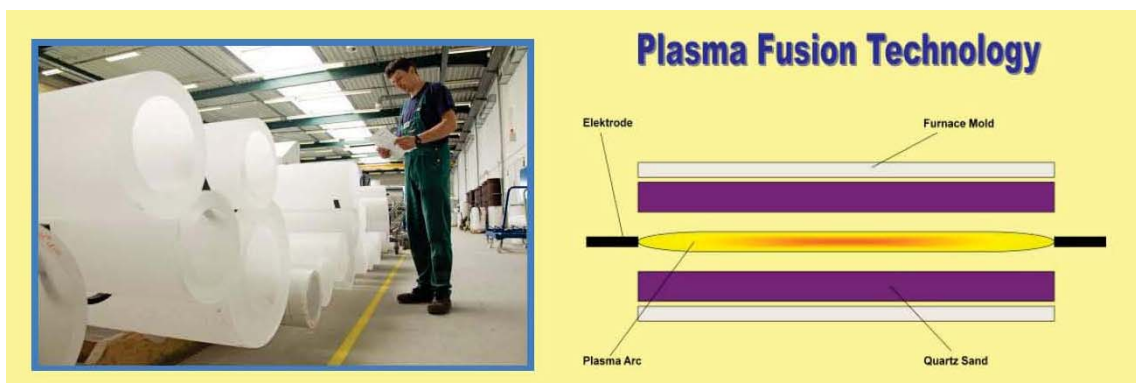
Dear Ladies and Gentlemen,

it was a pleasure for me to have a close look at the Avtoreferat of the thesis of **Dr. Grey Shamilevich Boltachev** devoted to peculiarities of the mechanical properties of nano-powders and their effects on magneto-pulsed compaction processes he submitted in applying for the scientific degree of a **Doctor of Physical and Mathematical Sciences** by specialities 01.04.07 (condensed matter physics) and 01.04.13 (electrophysics, electrophysical devices).

I know Dr. Boltachev for about 15 years now from my frequent visits in Yekaterinburg and his participation in the Research Workshops on **Nucleation Theory and Applications** organized by me at the Bogoliubov Laboratory of Theoretical Physics of the Joint Institute for Nuclear Research in Dubna, Russia, and one of his visits to the **International conference on the Interplay Between Glass Transition and Crystallization** at my home Institute of Physics of the University of Rostock, Germany. I remember with great pleasure the common work we did with him on fundamental problems of another field of nano-science, the kinetics of first-order phase transitions. The results of this common work are published in 2 common chapters in monographs and 5 common

publications in high-level international journals (J. Chemical Physics, J. Colloid and Interface Science).

We had also some years ago an extended discussion of possible methods of compaction of quartz glass powders in connection with certain problems in the technology of production of high purity quartz glass I was involved in for some time. The problem was the following: In order to prepare quartz glass cylinders with appropriate properties, the density of the quartz glass powder had



to be increased. We had developed even some first common project application, which was then, however, not realized due to the existing at that time current economical situation. Having now his DSc-thesis, one question immediately arises whether the new approaches developed by Dr. Boltachev he considers also as applicable to this problem. In such case, it would be of course of interest to renew the contacts with QSIL-company producing the respective material.

Other discussions on problems of powder compaction we had in the course of recent years in connection with some of his publications on different topics concerning compaction of nanopowders. I was always very glad to see that his work in this different field of science continues similarly successful as in the field of phase transformation kinetics.

In his DSc-thesis, Dr. Boltachev deals with the highly complex problems of the theoretical analysis of the peculiarities of the interaction of nanoparticles and their effects on compaction of nanopowders allowing one to arrive at effective methods to compress such nano-powders. These problems are both of fundamental scientific and technological interest as described in the thesis. The high scientific level of his studies is reflected appropriately in the present thesis as well in the list of publications. In the spectrum of the results, I would like to underline, in particular, the combination of detailed thorough theoretical analysis with computer simulations and comparison with experimental data.

The thesis is prepared at a high level also with respect to the way of presentation of the results. In this way, in any respect, the work of Dr. Grey

Shamilevich Boltachev fulfills all requirements according to paragraph 9 of the Regulations on awarding the scientific degrees (VAK, 24.09.2013, N 842; п. 9 Положения о присуждении ученых степеней) to be accepted as the *Thesis for the degree of Doctor of Science in Physics and Mathematics*. On the basis of above mentioned considerations, I recommend the Dissertation Defence Council to accept the application of Dr. Grey Shamilevich Boltachev and to assign to him the scientific degree of a Doctor of Physical and Mathematical Sciences by specialities 01.04.07 (condensed matter physics) and 01.04.13 (electrophysics, electrophysical devices).

Sincerely yours



Dr. rer. nat. habil. Jörn W. P. Schmelzer

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Подпись Д-р W. P. Schmelzer
заверено

Ученый секретарь МФУиФЧ



С. К. Кузнецов



Entsprechend den Rechtsvorschriften über die akademischen Grade erteile ich

JÜRN SCHMELZER

das Recht,-

aufgrund der durch Beschluß der Odessaer Staatlichen Universität "I.I. Metschnikow", UdSSR, vom 28. Juni 1975 zuerkannten Qualifikation in der Fachrichtung

PHYSIK

den akademischen Grad

DIPLOMPHYSIKER

(Dipl.-Phys.)

zu führen.

Diese Urkunde gilt nur in Verbindung mit dem Dokument über die von der oben angeführten wissenschaftlichen Institution beschlossene Verleihung.

GEMEINSAME EINRICHTUNG DER LÄNDER

Brandenburg, Mecklenburg-Vorpommern, Sachsen-Anhalt,
Sachsen, Thüringen

für Aufgaben in Bildung und Wissenschaft
(gemäß Artikel 14 Einigungsvertrag)

Der Leiter

Berlin, den 11. März 1975



Dr. theol. Reiher



Der Wissenschaftliche Rat
der Wilhelm-Pieck-Universität verleiht

Herrn Dipl.-Phys. Jörn Schmelzer

geb. am 14.11.1951 in Grevesmühlen

den akademischen Grad

doctor rerum naturalium (Dr. rer. nat.)

nachdem ~~er seine~~ wissenschaftliche Befähigung auf dem Gebiet

- Theoretische Physik -

nachgewiesen hat und das Gesamturteil

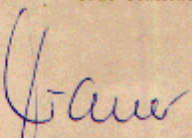
„magna cum laude“


erteilt wurde.

Rostock, den 4.9.1979

Der Rektor

Der Dekan


Prof. Dr. Sc. phil. Brauer


Prof. Dr. Sc. nat. Ulbricht





Der Wissenschaftliche Rat
der Wilhelm-Pieck-Universität verleiht

Herrn Dr. rer. nat. Jörn Schmuckler

geb. am *14. 11. 1951* in *Grevesmühlen*

den akademischen Grad

doctor scientiae naturalis (Dr. sc. nat.)

auf Grund *seiner* hervorragenden wissenschaftlichen Befähigung
auf dem Gebiet

~ Theoretische Physik ~

und *seiner* erfolgreichen Tätigkeit als Leiter
wissenschaftlicher Kollektive.

Rostock, den *23. 10. 1985*

Der Rektor

Prof. Dr. sc. phil. Bräuer

Der Dekan

Prof. Dr. sc. techn. Siedschlag

U N I V E R S I T Ä T R O S T O C K

Gemäß § 130 der Verordnung über Hochschulen (Vorläufige Hochschulordnung) vom 18.09.1990 (GBL I Nr. 63 S. 1585) wandelt der Senat der Universität Rostock den von der

Wilhelm-Pieck-Universität Rostock

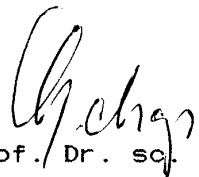
Herrn/~~XXXX~~ Frau Dr.rer.nat. J. Schmelzer geb. am 14.11.1951

mit dem Datum des 23.10.1985 verliehenen akademischen Grad Dr. sc. nat. und die mit Datum vom 17.12.1986 erworbene Facultas docendi für das Fachgebiet

- Theoretische Physik -

um in den Grad doctor rerum naturalium habilitatus.

Rostock, 15.04.1991


Prof. Dr. sc. nat. Maeß
Rektor

