



































































CHICAGO

My





















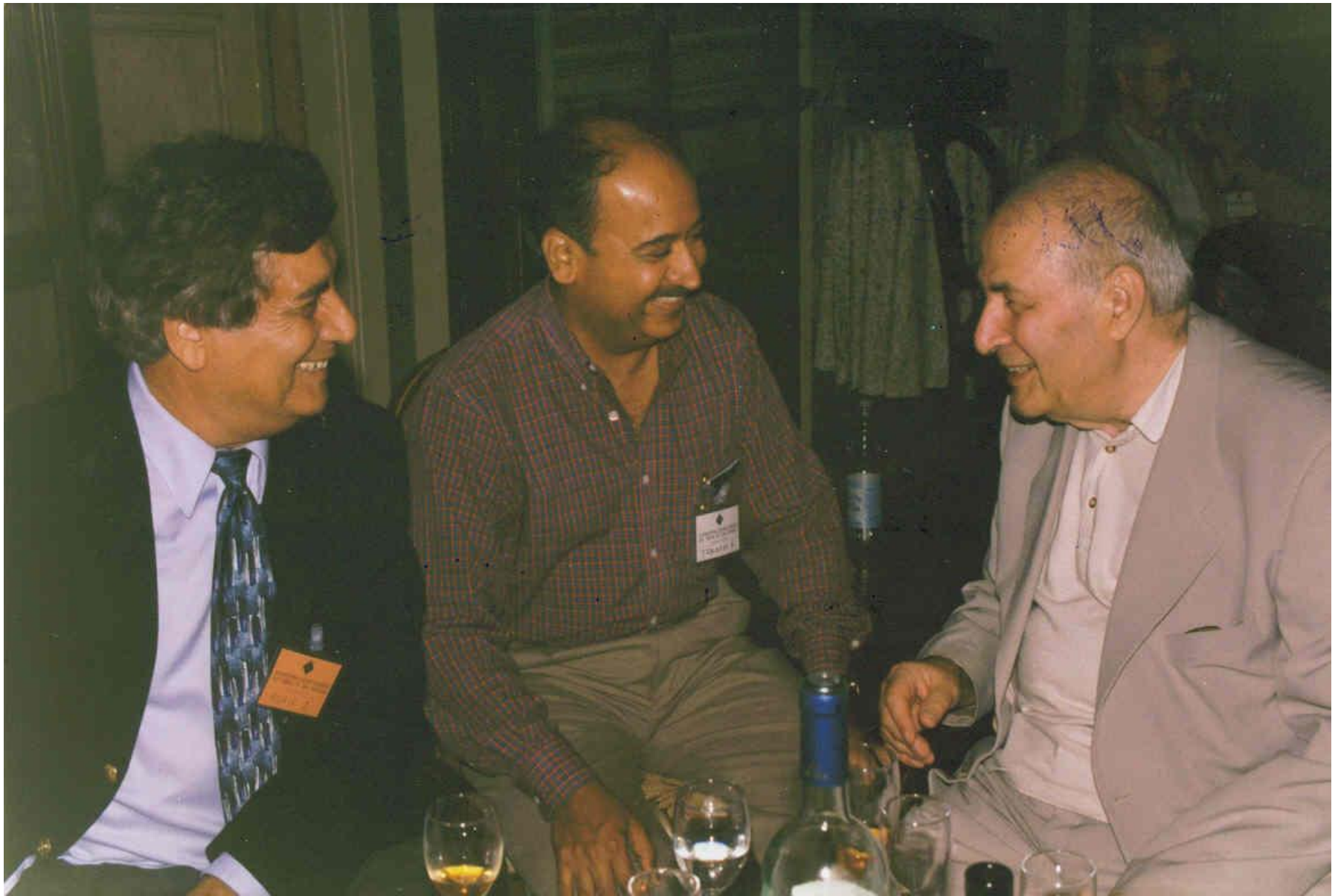










































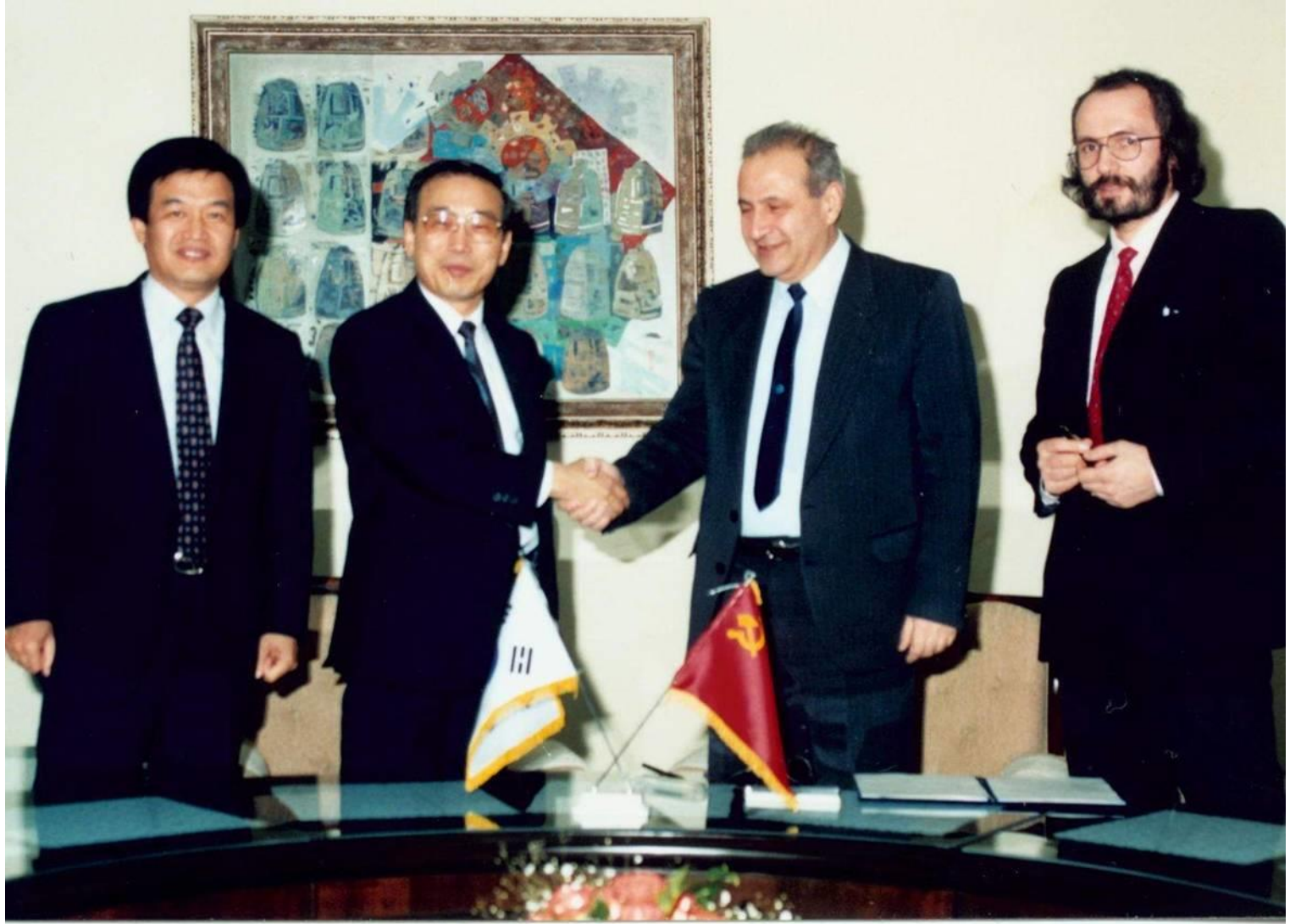


















































































PH.D. CANDIDATE



































ISRAEL  
LEBANON  
BORDER

ראש הנקרה  
ROSH HANIKRA



גבול  
שראל  
לבנון

שטח צבאי  
אסור לצילום  
MILITARY AREA  
NO PHOTOGRAPHY















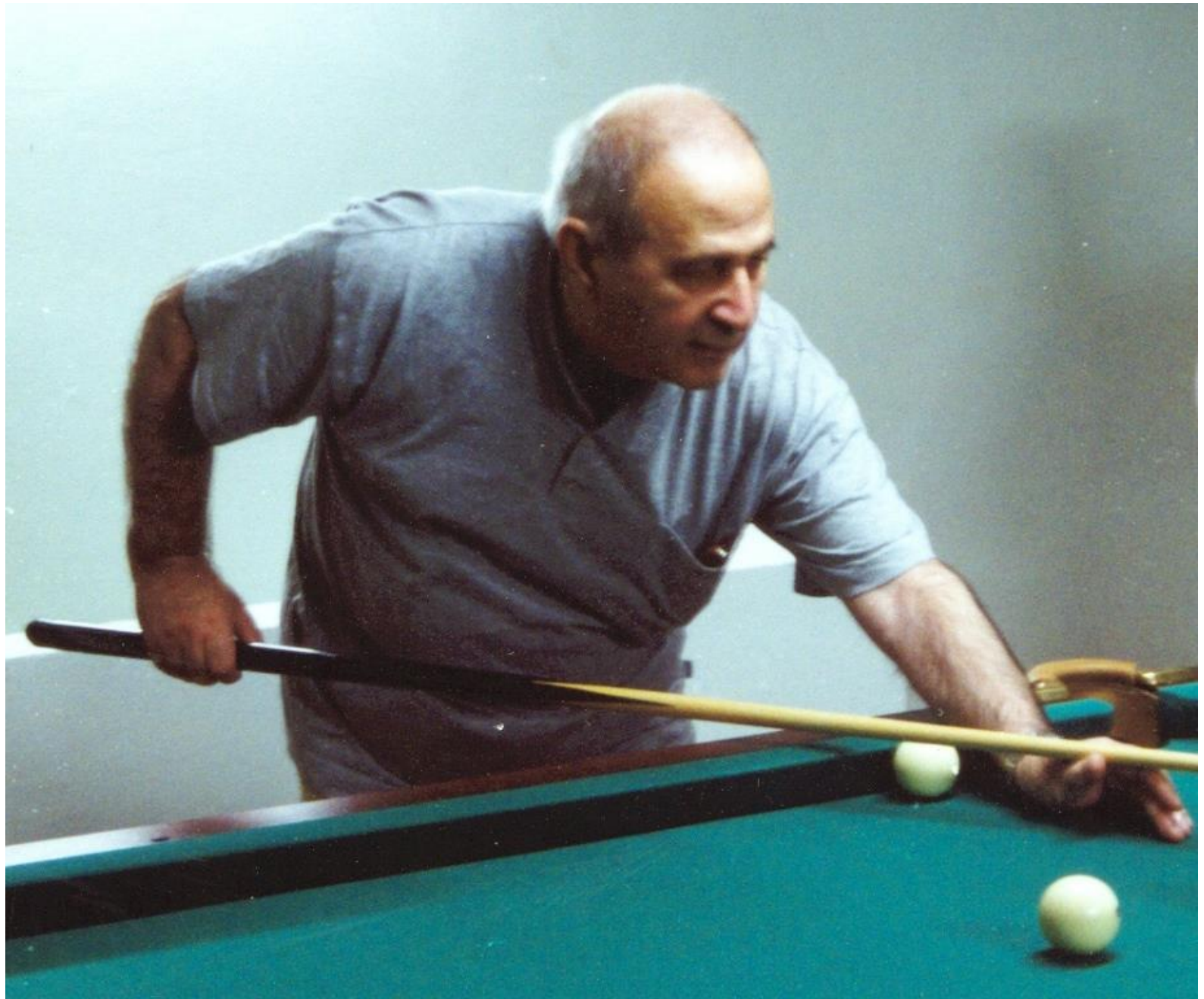




















































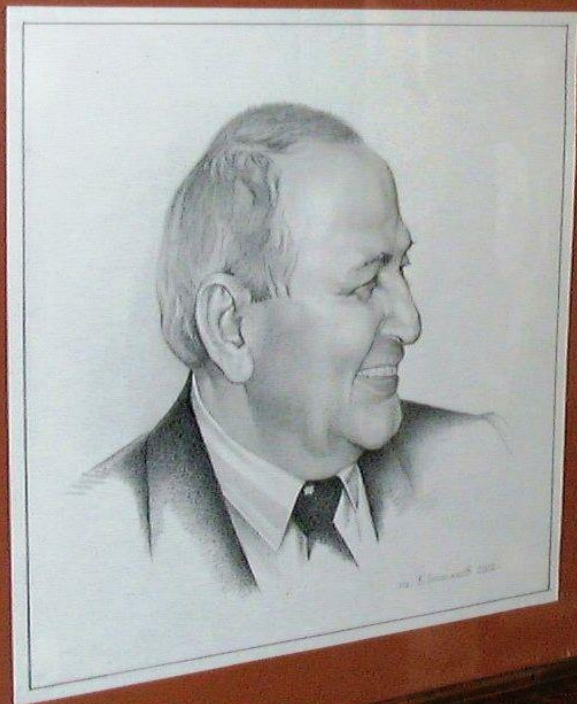












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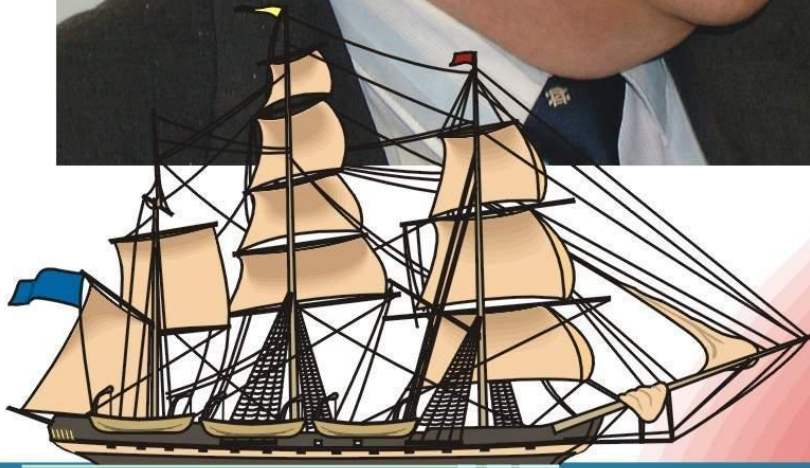
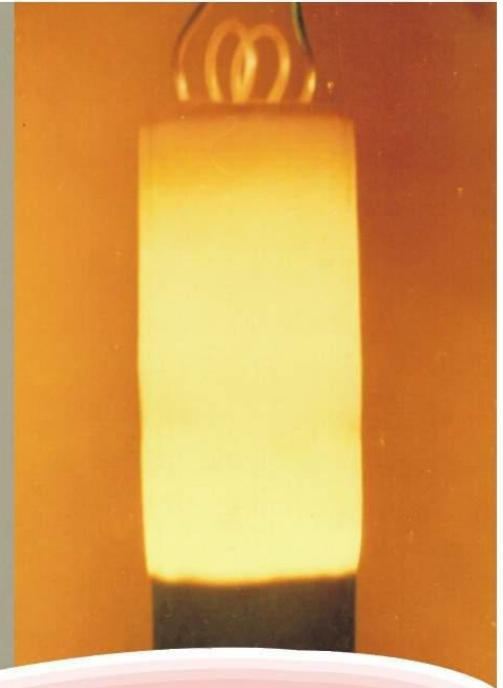








Designed by Alexander S.Rogachev







**SHS powders ARE USED for:**

production of parts by sintering and hot pressing;  
ceramic pastes;  
by thermal spraying, explosion alloying;  
coating deposition.



**ABRASIVE MATERIALS** made of the powders and  
a powder-base pastes when processing metallic  
parts allow  
processing materials for various applications;  
increasing the surface purity by 1 to 2 grades;  
increasing the part resistance by a factor of 1.5  
into the processed surface.

**COMPOSITE POWDERS**  
for wear- and heat-resistant  
coatings allow:

- extending temperature  
range of part operation;  
- increasing resistance of  
parts to temperature corrosion;  
- increasing resistance to  
wear.

**MATERIALS**

**SELF-PROPAGATING  
HIGH-TEMPERATURE  
SYNTHESIS-SHS**

SHS is a chemical  
Electro-thermally processing

**PECULIARITIES  
of  
SHS PROCESSES**

existence of high temperatures (800 to 4000°C);  
high rates of the process propagation  
rate of combustion front propagation up to 0.15 m/s;  
high purity of the products



**TECHNOLOGICAL  
ADVANTAGES of SHS**

minimum electric energy consumption;  
high labour productivity;  
production flexibility;  
waste-free production;  
ecological purity.


**T-3  
Classification  
Pressing,  
Extrusion**

SHS process combined  
with pressing, extrusion  
allows production of  
complexly shaped  
parts from reactive  
materials  
throughout







**SHS powders ARE USED for:**  
- production of parts by sintering and hot pressing;  
- production of pastes;  
- welding, explosion alloying;  
  
- ALS made of the powders and pastes when processing metallic materials for various applications;  
- high purity by 1 to 2 grades;  
- as a factor of 1.5;  
- as a factor of 1.

**COMPOSITE POWDERS**  
for wear - and heat - resistant coatings allow:  
  
- high temperature  
- high purity  
- possibility to vary

**SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS-SHS**  
  
SHS means maximum usage of chemical energy of reactants to produce inorganic compounds, materials and items for various applications and also for optimum organization of highly efficient technological processes.  
**APPLICATION FIELDS of SHS PRODUCTS**  
Metallurgy  
Machine building  
Electronics and electrical engineering  
Chemical industry  
Construction industry  
Medicine  
Space engineering

**PECULIARITIES of SHS PROCESSES**  
- extreme of high temperatures (800 to 4000°C);  
- high rates of the process propagation;  
- rate of combustion front propagation up to 0.15 m/s;  
- high purity of the products.  
  
**TECHNOLOGICAL USES of SHS**  
- low energy consumption;  
- high productivity;  
- better flexibility;  
- free production;  
- high purity of products.























































А.Г. Мерз

КОНЦЕПТУАЛЬНЫЙ ВЗГЛЯД  
НА ПРОЦЕССЫ РЕШЕНИЯ ПРОБЛЕМЫ  
САМОРАСПРЕДЕЛЕНИЯ  
ВЫСОКОТЕМПЕРАТУРНОГО  
ИНТЕГРА



А.Г. Мержанов

КОНЦЕПТУАЛЬНЫЙ ВЗГЛЯД  
НА ПРОЦЕССЫ И ПРОБЛЕМУ  
АМОРАСПРОСТРАНЯЮЩЕГО  
ВЫСОКОТЕМПЕРАТУРНОГО  
СИНТЕЗА























