

PROPERTIES OF REFRACTORY SUBSTANCES AT ULTRA-HIGH TEMPERATURES

Moscow Institute of Physics and Technology (National Research University)

Degree or qualification is awarded: **PhD (Candidate of Science)**

Language of study: **English**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **375 000 RUB**

Programme webpage at the university website:

<https://eng.mipt.ru/programs/properties-of-refractory-substances-at-ultra-high-temperatures/>

Programme curator: **Denis Ustyuzhaninov**

Tel.: **+7 (498) 713 91 70**

E-mail: interadmission@phystech.edu

Entry requirements:

- Master's degree / equivalent in a related field
- B2 level of English
- Good track record of publications related to the topic of the intended research
- Strong research proposal 1,500 - 3,500 words

Research supervisor:

[Mikhail Sheindlin](#)

PhD, DSc

Supervisor's research interests:

Development of the advanced methods for studying of high temperature properties of materials at very high temperatures using laser heating and the "exploding wire" techniques. Study of high temperature behavior of graphite and liquid carbon and phase relations in the UHTC carbides and related materials.

Research highlights:

Use of unique self-made methods and equipment for studying of the various UHTCs at extremely high temperatures.

Supervisor's specific requirements:

- High education in physics or in non-organic chemistry.
- Clear desire and interest to be engaged in the experimental research.

Main publications:

- Mikhail Sheindlin, Timerkhan Falyakhov, Sergey Petukhov, Georgii Valyano, Andrey Vasin, Recent advances in the study of high-temperature behaviour of non-stoichiometric TaCx, HfCx and ZrCx carbides in the domain of their congruent melting point, Adv Appl Ceram, 2018, 117, Nov, 48-55
- Rachel Pflieger, Jean-Yves Colle, Igor Iosilevskiy and Michael Sheindlin. Urania vapor composition at very high temperatures. J. of Applied Physics, 109, 033501 (2011).
- C. Ronchi and M. Sheindlin. Melting point of MgO. J. of Applied Physics, 90, No.7 (2001), p.3325-3331.

Specializations within this programme