 

***CONFERENCES AND SYMPOSIA***

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# Old and new in the physics of phase transitions
## (Scientific session of the Physical Sciences Division of the Russian Academy of Sciences, 21 December 2016)

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A scientific session of the Physical Sciences Division of the Russian Academy of Sciences (RAS), "Old and new in the physics of phase transitions," was held in the conference hall of the Lebedev Physical Institute, RAS on 21 December 2016.

The following talks were presented at the session:

(1) **Ryzhov V N** (Vereshchagin Institute for High Pressure Physics, Russian Academy of Sciences, Troitsk, Moscow) "Berezinskii–Kosterlitz–Thouless transition and two-dimensional melting";

(2) **Mikheyenkov A V, Utyuzh A N** (Vereshchagin Institute for High Pressure Physics, Russian Academy of Sciences, Troitsk, Moscow) "Hydrogen and its compounds under extreme pressure";

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(3) **Kats E I** (Landau Institute for Theoretical Physics, Russian Academy of Sciences, Chernogolovka, Moscow region) "Unconventional phase transitions in liquid crystals";

(4) **Brazhkin V V** (Vereshchagin Institute for High Pressure Physics, Russian Academy of Sciences, Troitsk, Moscow) "Phase transformations in liquids and the liquid–gas transition in fluids at supercritical pressures."

An expanded version of talk 1 and an expanded version of talk 2 are presented in the Reviews of Topical Problems section of this *Physics–Uspekhi* issue (see *Usp. Fiz. Nauk* **187** (9) 921 (2017) [*Phys. Usp.* **60** (9) 857 (2017)] and *Usp. Fiz. Nauk* **187** (9) 953 (2017) [*Phys. Usp.* **60** (9) 886 (2017)]).

The papers based on talks 3 and 4 can be read in the Conferences and Symposia section further in this issue (see *Usp. Fiz. Nauk* **187** (9) 1022 (2017) [*Phys. Usp.* **60** (9) 949 (2017)] and *Usp. Fiz. Nauk* **187** (9) 1028 (2017) [*Phys. Usp.* **60** (9) 954 (2017)], respectively.)