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SCIENTIFIC LEGACY OF PETRO TOMCHUK. BIBLIOGRAPHY

The bibliography contains a list of scientific works of the prominent Ukrainian theoretical physicist Petro Tomchuk (2.01.1934–7.10.2024). The bibliographic data are used to analyze the number of publications by year and identify the journals in which P.M. Tomchuk most often published his articles.

Keywords: bibliography, theoretical physics, solid-state physics, semiconductors.

A Brief Bibliography Note

Petro Tomchuk published more than 300 scientific works. His first article was published in 1960, and his last one in 2020. These two articles separate six decades of fruitful scientific activity conducted by P.M. Tomchuk.

The first edition of the list of scientific works by P.M. Tomchuk was published in 2014 in the collection “Life Credo Is Science: To the 80th Anniversary of Petro Mykhailovych Tomchuk” (ed. I. Gandzha, V. Shenderovskiy). Petro Tomchuk himself worked on compiling that list, together with the staff of the library at the Institute of Physics of the NAS of Ukraine. Here, we present a significantly supplemented and detailed bibliography, which also contains works by P.M. Tomchuk published after 2013. We tried to make this list of works as complete as possible. However, since not all of P.M. Tomchuk’s publications are available in electronic form (this mainly concerns works published in the Soviet era), it is still possible that we have missed some of them.

We deliberately did not add conference abstracts to the list, because, in any case, it is probably not possible to find all the abstracts of the talks that Petro Tomchuk made during his long scientific career

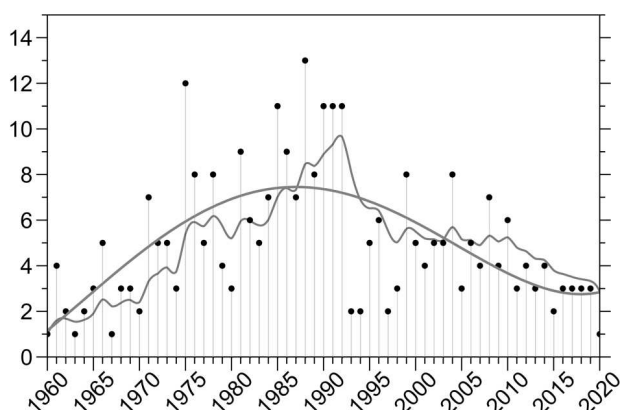
(he himself did not compile such a list). Therefore, we have kept in the bibliography only the materials of those conferences that were published in periodicals or in properly formatted collections of works. We have kept all the references to publications in the original language. Where possible, we have also added references to the translation of these publications into English.

The distribution of the number of publications by year (see Figure) allows us to conclude that the most fruitful period for Petro Tomchuk’s scientific activity was from 1985 to 1992. This golden period falls on the time when Petro Tomchuk was already 50 years old, but not yet sixty. A sharp decline in the number of publications in 1993–1994 can be explained by the crisis which developed in Ukraine immediately after the Soviet era. The period from 1999 to 2010 can be considered as a decade of renaissance for Petro Tomchuk’s scientific work, when he managed to rebuild himself conforming to a new lifestyle and published many important works. It is also worth highlighting the early surge in P.M. Tomchuk’s scientific activity, which was in the mid-70s (by that time, he was already 40 years old).

Among all the journals where P.M. Tomchuk published his works, the undisputed leader in terms of the number of publications is the Ukrainian Journal of Physics. As many as 76 articles by Petro Tomchuk were published here, including his last work. The second in terms of the number of publications is Physics of Solid State – a total of 30 articles, including the very first work by P.M. Tomchuk. More than ten works were also published in Physics and Technics

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Distribution of the number of scientific works by P.M. Tomchuk by year. Undulating solid curve – exponential moving average (EMA) calculated by the formula $y_{i+1} = y_i + \alpha(x_{i+1} - y_i)$, where x_i is the value of the number series at the point i , $\alpha = 0.2$ is the smoothing constant. Smooth solid curve – fit by polynomials and hyperbolic function

of Semiconductors – 22 articles and Wiley’s *Physica Status Solidi* (b) – 15 articles. These four journals account for almost half of P.M. Tomchuk’s publications. The topics of these journals best characterize the main directions of P.M. Tomchuk’s scientific activity – general physical research, solid state physics, and semiconductor physics. It is worth noting that Petro Tomchuk also published more than 30 preprints at the Institute of Physics, where he worked throughout his entire scientific life. Given the number of articles published by P.M. Tomchuk in the *Ukrainian Journal of Physics*, it is natural that we publish a complete list of his scientific works here.

List of Scientific Works by P.M. Tomchuk

1960

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НАУКОВИЙ СПАДОК ПЕТРА ТОМЧУКА.
БІБЛІОГРАФІЧНИЙ ОПИС

Бібліографічний опис містить список наукових праць видатного українського фізика-теоретика Петра Михайловича Томчука (2.01.1934–7.10.2024). Бібліографічні дані використано для аналізу кількості публікацій за роками і визначено журнали, в яких Петро Томчук найчастіше публікував свої статті.

Ключові слова: бібліографія, теоретична фізика, фізика твердого тіла, напівпровідники.