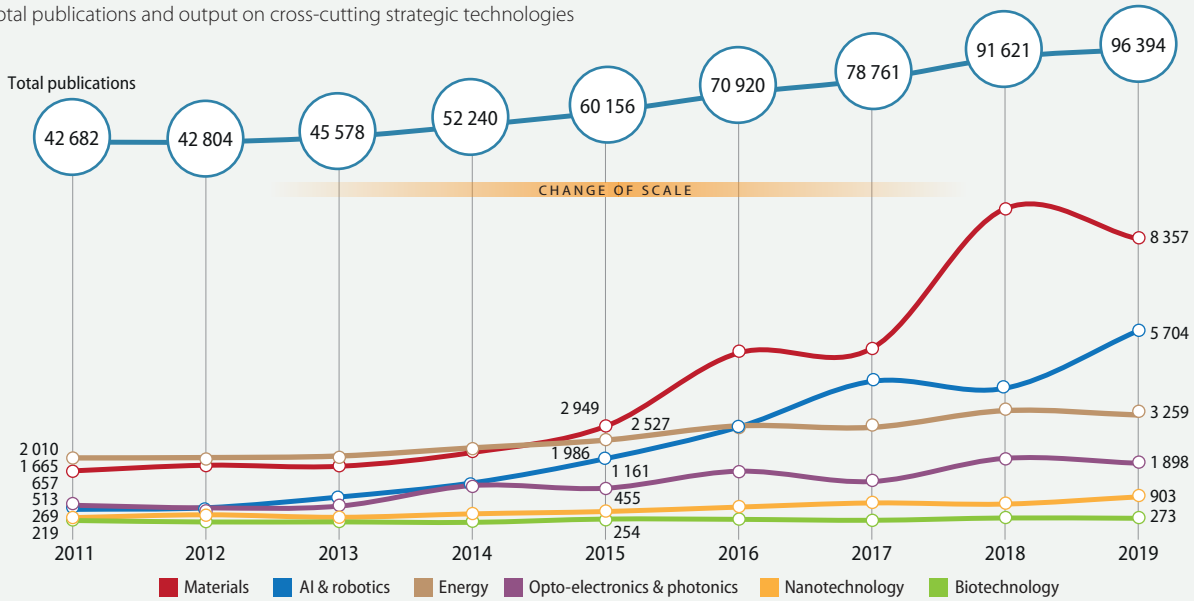




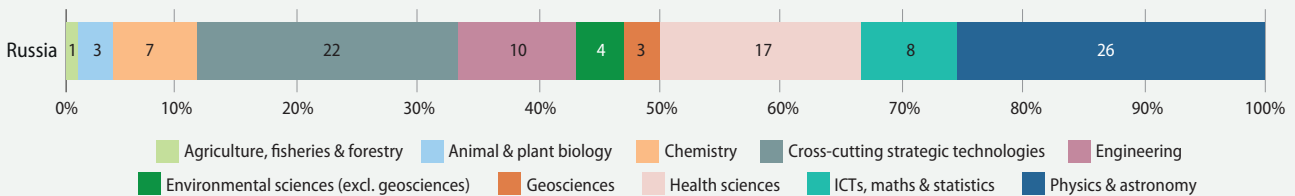
Figure 13.5: Trends in scientific publishing in the Russian Federation

**Volume of scientific publications in the Russian Federation, 2011–2019**

Total publications and output on cross-cutting strategic technologies



**Scientific publications in the Russian Federation by broad field of science, 2017–2019 (%)**



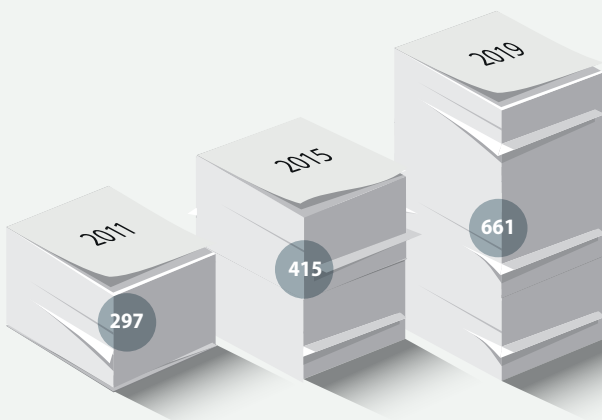
**0.71**

Average of relative citations, 2014–2016; the G20 average is 1.02

**24%**

Share of Russian publications with foreign co-authors, 2017–2019; the G20 average is 25%

**Scientific publications per million inhabitants in the Russian Federation, 2011, 2015 and 2019**



**How has output on SDG-related topics evolved since 2012?**



Russian scientists are publishing more on nuclear fusion and radioactive waste management than would be expected, relative to global averages.

On the topic of nuclear fusion, their intensity is double the global average. Output rose from 869 (2012–2015) to 1 042 publications (2016–2019) and on radioactive waste management from 387 (2012–2015) to 607 (2016–2019) publications.

The Russian Federation has 36 operational nuclear reactors. It has been working with the European Union to improve nuclear waste treatment (Box 13.2). It also has a stake in the International Thermonuclear Experimental Reactor in France, which will be developing nuclear fusion technology.

Among selected topics with at least 100 publications during the period under study, sustainable transportation showed the fastest growth, with a seven-fold increase from 83 (2012–2015) to 607 (2016–2019), even though this topic is underrepresented in the Russian Federation, relative to global averages (SI = 0.32).

The next-fastest growth occurred in other underrepresented topics (SI = 0.2–0.6): eco-construction materials; precision agriculture; wind turbine technologies; wastewater treatment, recycling and re-use; agro-ecology; and eco-industrial waste treatment.

Note: SI = specialization index. For details, see chapter 2

**Russian Federation's top five partners for scientific co-authorship, 2017–2019 (number of papers)**

	1st collaborator	2nd collaborator	3rd collaborator	4th collaborator	5th collaborator
Russian Federation	USA (14 476)	Germany (14 026)	France (8 621)	UK (7 874)	China (7 297)

Source: Scopus (excluding Arts, Humanities and Social Sciences); data treatment by Science-Metrix