These 16 institutions were selected from among the most improved institutions in the Nature Index between 2015 and 2017. Some showed exceptional absolute and relative growth in their overall contribution to the papers in the journals tracked by the index, measured by fractional count (FC), while others excelled in a specific subject category. Chinese institutions make up more than half of the top 100 rising stars, far exceeding the 20 from the United States, and four each from Germany and the Netherlands (see online tables).

MARTIN LUTHER UNIVERSITY HALLE-WITTENBERG

GERMANY | 2015 WFC: 18.81 | 2017 WFC: 29.18

Martin Luther University Halle-Wittenberg was established in 1817 as the largest university in Germany’s state of Saxony-Anhalt. The Nazi regime and subsequent politicisation of academia in East Germany took a toll on the university’s faculty and programmes. After the fall of the Berlin Wall, MLU emerged as a medium-sized university, with around 340 professors among its faculty in 2017, offering the panoply of science subjects. Its research and teaching budget in 2017 was €205 million (US$238 million), excluding third-party funding.

MLU’s rise in the Nature Index has been driven by its chemistry output: between 2015 and 2017, its contribution to articles in this field almost tripled. To Wolfgang Binder, dean of the faculty of natural sciences, MLU’s interdisciplinary approach of connecting physics, chemistry and biology has laid the groundwork for this success.

MLU’s Institute of Chemistry conducts research on subjects ranging from nanostructured and self-healing polymers, to the role of protein misfolding in Alzheimer’s and Parkinson’s diseases, and liquid crystals used in flat-panel displays (LCDs). In 2016, MLU chemist, Carsten Tschierske and his team, in collaboration with Trinity College Dublin, published research on materials that could make liquid-crystal technology faster and more energy-efficient. AK