



### 3 RESULTS

Figure 2 shows the distribution of industries of converging technologies. Here are seven strategic emerging industries and one "other traditional industries" that refers to converging technologies that don't belong to the strategic emerging industries.

Figure 3 shows converging technical structure map of 161 converging technologies. Each circle represents a converging technology. The size of a circle represents the number of the quintuple patent families in the converging technologies. The color of the circle represents the industrial classification of the converging technology. The line between circles indicates that two converging technologies belong to a certain emerging sub-industry. The thickness of the lines is proportional to the number of same emerging sub-industries between two converging technology. The lines between circle of different colors represent that converging technology is cross-industry.

Figure 4 shows distribution of the average TA of industries. The smaller TA value, the more active.

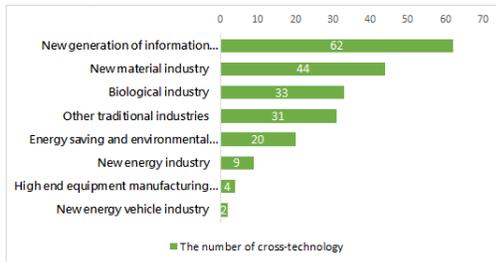


Figure 2: Distribution of industries of converging technologies

Table 1 lists 4 cross-industry and  $TA \geq 4$  cross-industry converging technologies. The column named as "Description of Technology" shows technology interpretation. The column named as "Associated Industries" shows several industries that converging technology can be used.

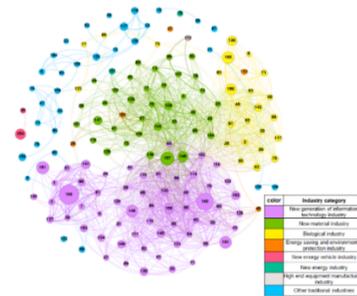


Figure 3: Converging technical structure map

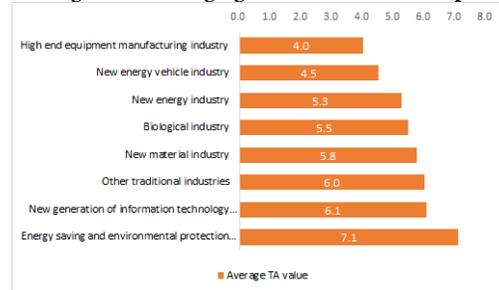


Figure 4: Distribution of the average TA value of industries

### 4 CONCLUSIONS

In this paper, 161 converging technologies are identified. Most of the converging technologies are converging in the same industry. The new generation of information technology, new material industry and biological industry are the top 3 industries of converging technologies. High end equipment manufacturing industry is the most active industry

Converging Tech No	Description of Technology	Associated Industries
No.65	Related manufacturing methods and process engineering of liquid crystal, light emitting diode and other display devices, semiconductor light emitting devices and so on.	Energy saving and environmental protection industry, New generation of information technology industry
No.97	The preparation of the whole carbon family and its composite materials and its application in the fields of photoelectric and heat.	New material industry, New energy industry, Energy saving and environmental protection industry
No.115	Manufacturing methods and technology of solar cell; Related manufacturing methods and technology of other photoelectric conversion elements such as solid state image sensor.	New generation of information technology industry, New energy industry
No.154	Robotics, such as control systems, visual and voice systems and so on; Power and control technology of electric vehicle/hybrid vehicle;	High end equipment manufacturing industry, New energy vehicle industry

Table 1: Cross-industry and  $TA \geq 4$  converging technologies (For lack of space, only show part of the result)

### REFERENCES

[1] Rosenberg N. Technological Change in the Machine Tool Industry, 1840-1910[J]. Journal of Economic History, 1963, 23(4):414-443.

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[3] Tijssen R J W. A quantitative assessment of interdisciplinary structures in science and technology: Co-classification analysis of energy research [J]. Research Policy, 1992, 21(1):27-44