

## **Future Minerals Flows of Photovoltaics in Japan**

SHINSUKE MURAKAMI<sup>1</sup>

<sup>1</sup> The University of Tokyo, 7-3-1 Hongo Bunkyo-ku Tokyo,  
113-8656, Japan

### **Introduction**

Japan introduced its FIT (Feed-In Tariff) scheme relatively late in 2012, and photovoltaics were suddenly diffused at the initial couple of years. Since the rate is guaranteed for a designated period, we expect the huge generation of EOL panels at the end of the period. Japan has no scheme for photovoltaics EOL management and needs to forecast the EOL generations, including the amount of contained materials flow.

### **Method**

Methodology employed in this study is standard dynamic material flow/stock modeling with the diffusion scenario and lifespan assumption. [1] The difference from other product is that the lifespan significantly depends on the legislation, FIT scheme.

### **Result and Discussion**

According to the extreme scenario by MOE, we will have peak generation of 700,000 tons of EOL panels in 2032. [2] However, our in-detail analysis revealed it can range from 150,000 to 700,000 tons. Most part of it was glass, though non-negligible amount of silvers and some critical minor critical elements, such as indium are contained. Under the current technologies, the recoveries of these minor elements will not be feasible, but in order to make total EOL management system more feasible, we should keep working on the development and improvement of the needed technologies.

[1] Murakami *et al.* (2015) *Gl. Env. Res.*, **19**, 181 – 186. [2] MOE (2015)