INOEL Yamagata University Innovation Center for Organic Electronics

山形大学 Yamagata University

Yamagata University Flexible Electronics Japan-Germany International Collaborative Practical Utilization Consortium (YU-FIC)

Yamagata University has constructed close connection with Saxony/Dresden in Germany in the field of organic electronics, coworking with Yamagata prefecture and Yonezawa city. Yamagata University Flexible Electronics Japan-Germany International Collaborative Practical Utilization Consortium (YU-FIC) collaborates with companies and institutes in Germany, aiming at novel flexible electronics products.

Project term

October 2017 ～ March 2021

Subjects

- LAOLA: Large Area Organic Lighting Applications on flexible substrates
- IonT: Internet on Things - Intelligent OLED-OPV based Signage for interactive Advertisement
- F2E: Free Form Electronics - Freedom in design by thermo-formed printed electronics

Participants (May. 2019)

FUJIKURA KASEI CO., LTD.
KEIHIN RAMTECH CO., LTD.
KOMORI Corporation
Mitsuboshi Diamond Industrial Co., Ltd. Nippon Electric Glass Co., Ltd.
NIPPON STEEL Chemical & Material CO., LTD.
Seieido Printing Co., Ltd.
SERIA ENGINEERING, INC.
SurFtech Transnational Co., Ltd.
TAKEDA PRINTING CO., LTD.
TEIJIN LIMITED
Tokyo Process Service Co., Ltd.
The Japan Steel Works, LTD.
WIREDGATE Inc.

Collaboration with German activity

YU-FIC collaborates with 24 German companies and institutes which are organized by Organic Electronics Saxony (OES), having twice visits a every year, respectively.

Activity

Germany (Nov. 2017)

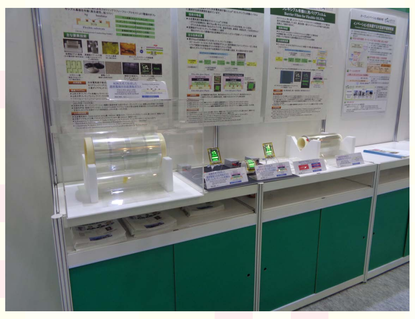
Japan (Feb. 2018)

LOPEC/Germany (Mar. 2018)

Germany (Sep. 2018)

IDW'18 (Dec. 2018)

Japan (Jan. 2018)



JFlex/Japan (Jan. 2018)

LOPEC/Germany (Mar. 2019)

Related program

- JST: Program on Open Innovation Platform with Enterprises, Research Institute and Academia (OPERA) [FY2016～FY2020]
- MEXT: Construction Program of Open Innovation Organization [FY2018～FY2022]
- MEXT: Regional Innovation Eco-system Program [FY2018～FY2022]

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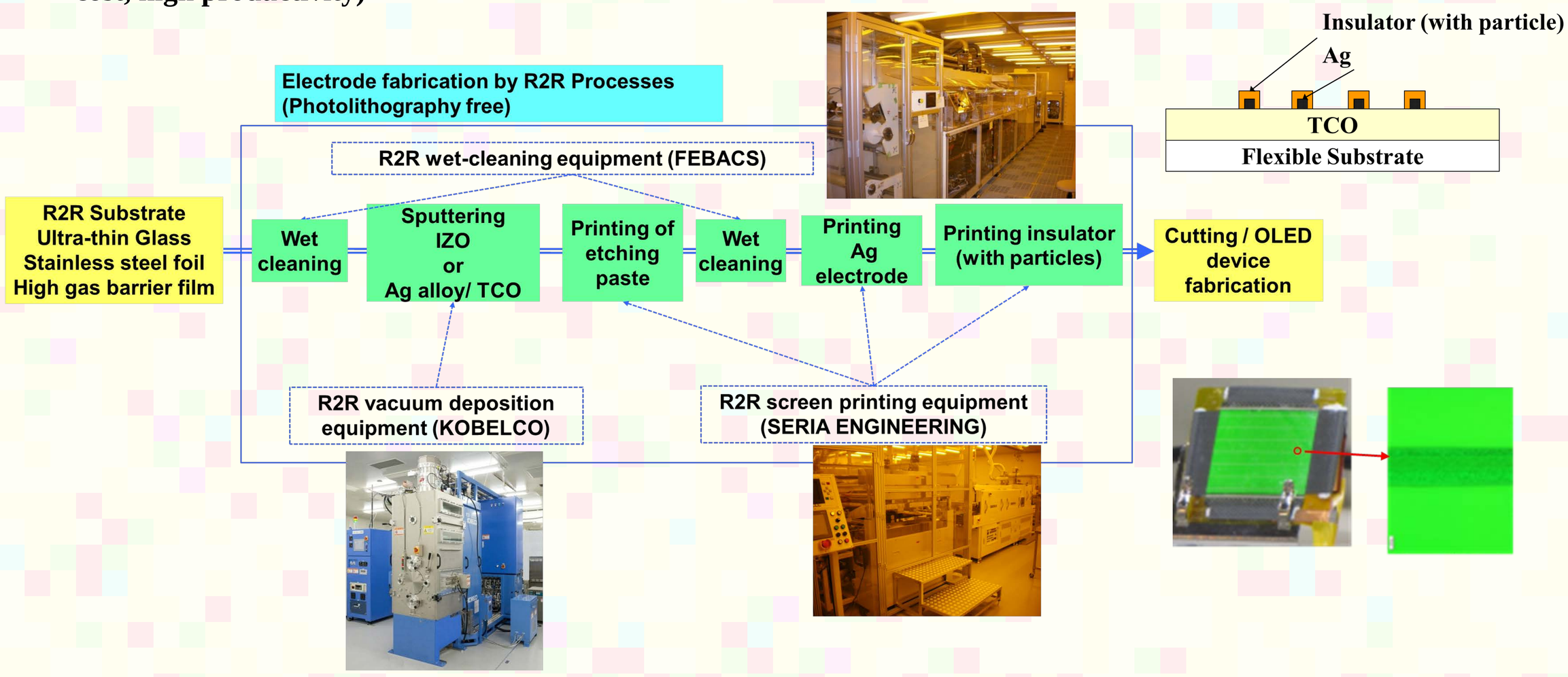
Roll-to-roll (R2R) Fabrication of Flexible Substrates with Electrode

LAOLA project

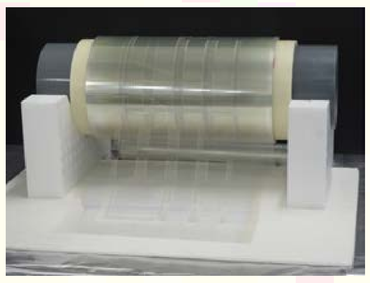
We develop roll-to-roll (R2R) fabrication technologies of flexible substrates with electrode, aiming at large size OLED lighting.

Technological features

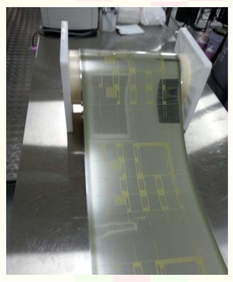
- **Roll-to-roll (R2R) fabrication of electrodes on flexible substrates by photolithography-free processes. (low cost, high productivity)**



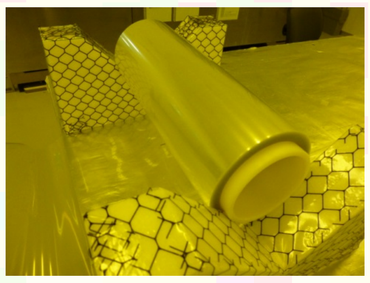
Key technologies



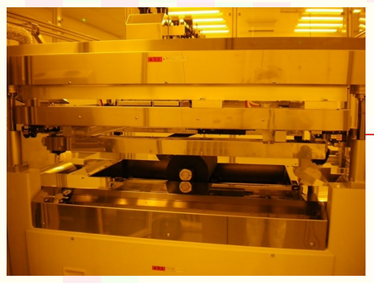
Ultra-thin glass (Nippon Electric Glass)

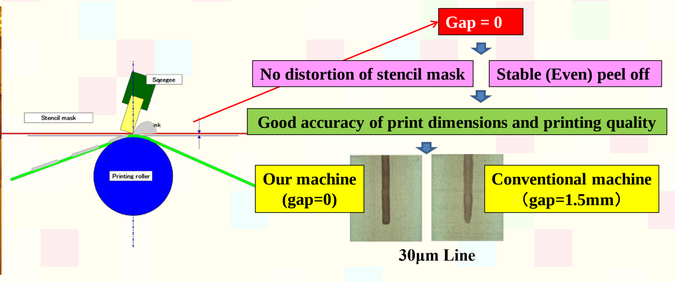


Stainless steel foil (NIPPON STEEL Chemical & Material Co., Ltd.)

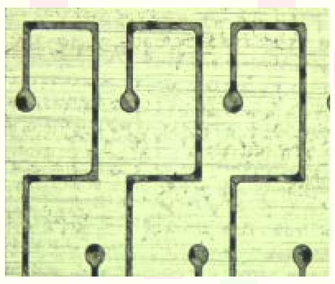


Plastic film (TEIJIN)



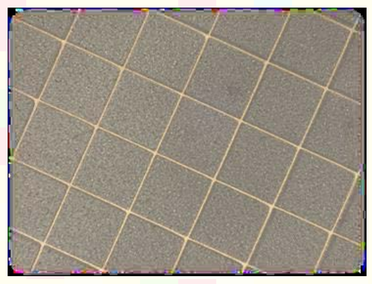


Screen printing equipment (SERIA ENGINEERING)

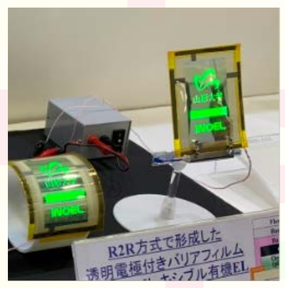


Screen mask (Tokyo Process Service)

Conducting ink (FUJIKURA KASEI)



Cutting (Mitsuboshi Diamond Industrial)



Flexible OLED device (Yamagata University)
Barrier resin: tesa

Collaboration

Nippon Electric Glass, NIPPON STEEL Chemical & Material, TEIJIN, SERIA ENGINEERING, Tokyo Process Service, FUJIKURA KASEI, Mitsuboshi Diamond Industrial