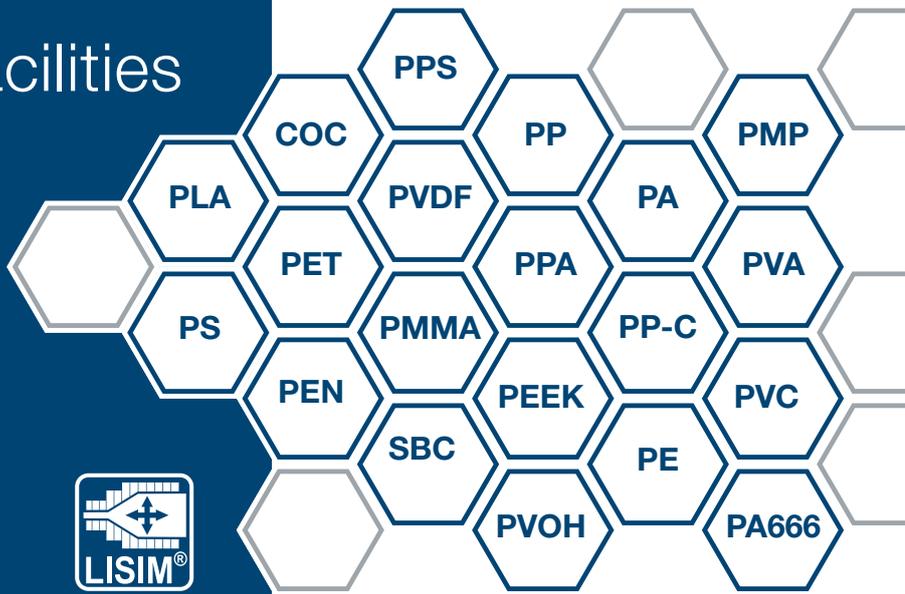




**TECHNOLOGY CENTER**  
BEST OPPORTUNITIES  
AT A GLANCE

# Technology center facilities

- Chemical Laboratory
- Laboratory Extruder
- Laboratory Stretcher KARO® 5.0
- Film Laboratory
- Pilot Line



## Pilot Line

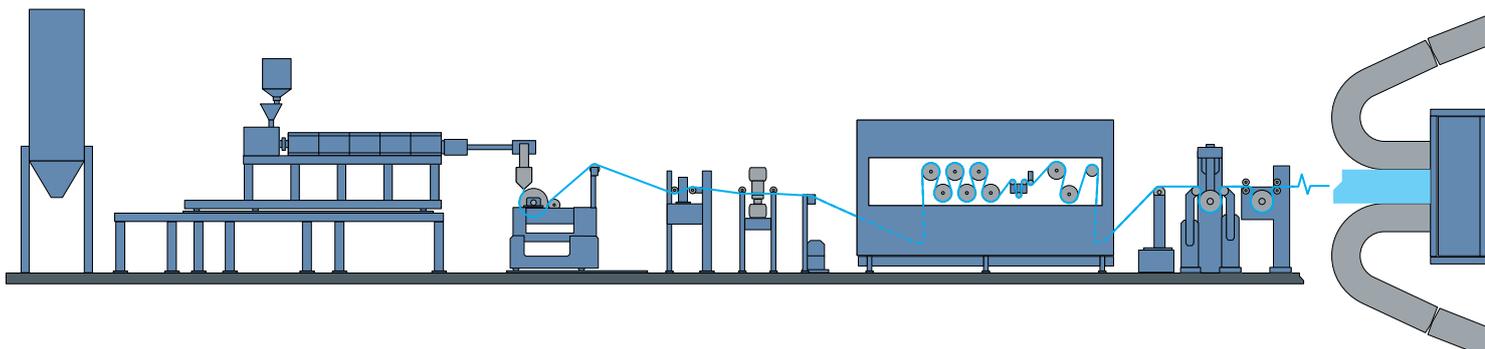
*Unique flexibility for all kinds of stretching*

Our Pilot Line has been further extended with a highly flexible machine direction orienter unit (MDO), additional clips to simulate a chain track for transverse direction orienter (TDO) and a newly integrated process control software. Thus, for the first time, numerous film types up to 7 layers can be manufactured in all stretching modes, using a wide variety of resins:

- MD (machine direction) stretching for e.g. tapes
- TD (transverse direction) stretching for e.g. sleeves
- Biaxial sequential stretching for packaging & technical films
- Biaxial simultaneous stretching for specialty films (unique LISIM® technology)

The Pilot Line is the perfect environment for R&D and sample production for BOPP, BOPET, BOPA, BOPS, BOPLA, MOPET-G, MOPS and many other film types.

BASIC SPECIFICATIONS	SEQUENTIAL	SIMULTANEOUS
Thickness range	1 - 120 µm	2 - 350 µm
Mech. stretching ratio MD	2 - 10	3.0 - 15 / fix ratios: 1.66 or 2.33
Mech. stretching ratio TD	3 - 10	3 - 10
Line speed	85 m/min	90 m/min
Net output, e.g. with PET	250 kg/h	250 kg/h



### Your challenge

- Film and process development
- Sample production and pre-marketing

### Our solution

- Extensive film and process know-how
- High level testing equipment
- Highly flexible stretching line

### Your needs

- Quick results needed
- Budget limitations
- Costs of R&D facilities

### Your benefits

- Save time and costs
- Quick response on your development
- Reliable source for production upscale

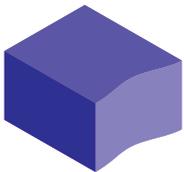


## Laboratory stretcher KARO® 5.0

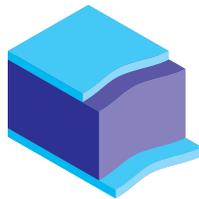
*Test films and sheets  
in a very simple and economical manner*

- Development of new film recipes and materials
- Test of new skin layers / additives
- Identification of process conditions up to 400°C
- Evaluation of film properties  
from stretched samples

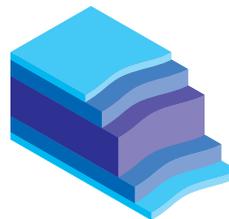
*Numerous film types manufactured in all stretching modes*



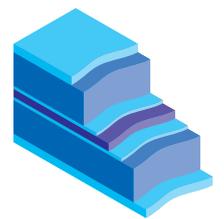
Mono-Layer Structure



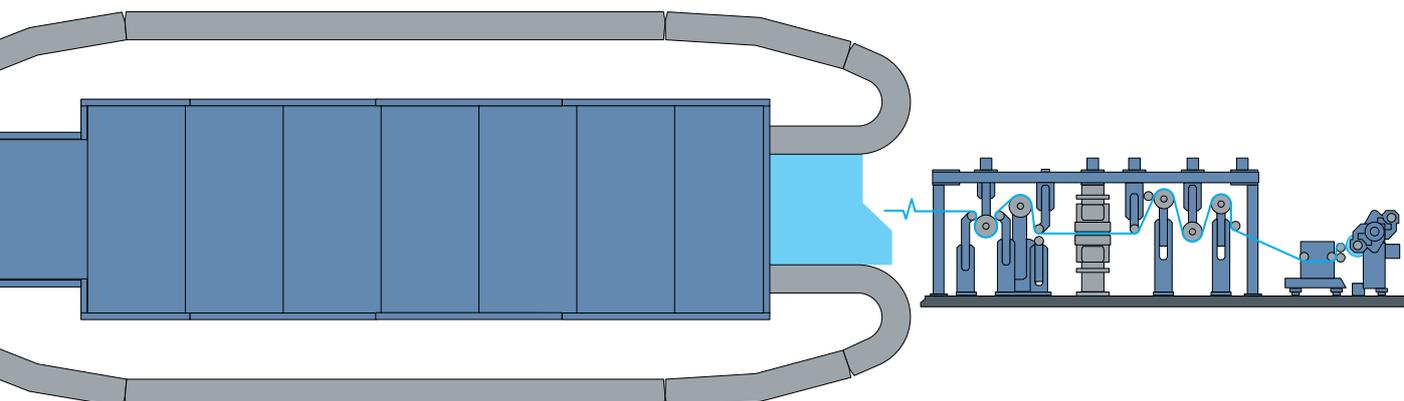
3-Layer Structure



5-Layer Structure



7-Layer Structure



# Experiences Pilot Line

## Sequential BOPP

2 - 100 µm

1/3/5/7-layer

- Multifunctional packaging film
- Low sealing temperature for high speed packaging
- High sealing strength film
- High surface energy film
- Inline coated film
- Vacuum coated ultra high barrier film
- 7-layer high barrier film
- MD shrink label film
- Synthetic paper / Stone paper



## Sequential and Simultaneous BOPA

15 - 35 µm

3/5-layer

- Low shrink film
- 5-layer high barrier film
- Cold forming film for blister & battery pouches

## Sequential BOPE

15 - 50 µm

3/5-layer

- Thin and tough sealing layer
- Display shrink film



## Simultaneous

- Low thermal shrink BOPP
- High shrink cigarette packaging
- Roso-Film
- Thin capacitor film (< 3 µm)

## Sequential & Simultaneous BOPET

2 - 400 µm

1/3/5-layer

- Heat sealable film (lidding for plain PET trays)
- Inline coated film (chemically treated)
- Thick film (basics for optical grade)
- Solar backsheet (UV stabilized)
- Low shrink film (substrate for flexible electronics)
- Low MOA film (polarizer protection)
- Ultra thin capacitor film



## Battery Separator Film

5 - 25 µm

1-layer

- PE-Evapore® UHMWPE and HDPE

## Monoaxially oriented film:

PETG, PS, Polyolefin

30 - 50 µm

1/3/5-layer

- MD oriented shrink sleeves
- TD oriented shrink sleeve

## And others:

**BOPLA, BOCOC, BOPVDF, BOPEN, BOPEEK, BOPC, BOPVA, BOPI,...**



**Brückner Maschinenbau  
GmbH & Co. KG**

Königsberger Str. 5-7  
83313 Siegsdorf  
Germany

T +49 8662 63-0  
sales@brueckner.com  
www.brueckner.com

