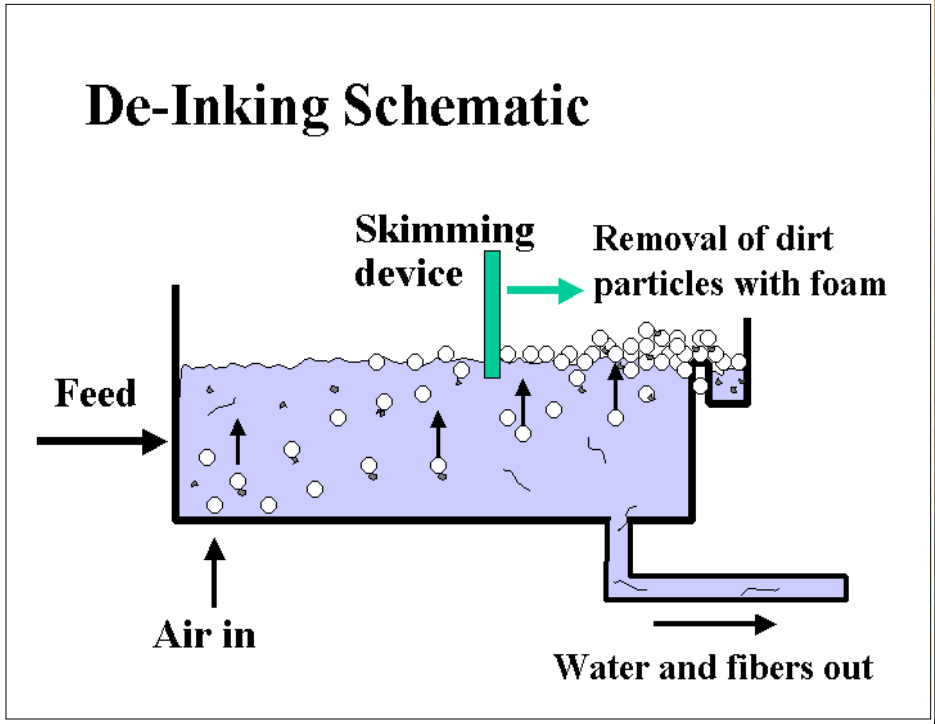
HP Digital Print Recycleability –
LEP and Inkjet Deinking

Progressive Profitable Printing

Flotation Process for Deinking



Source: „Paper Recycling and Inkjet Printing“, Don Burns, Kodak

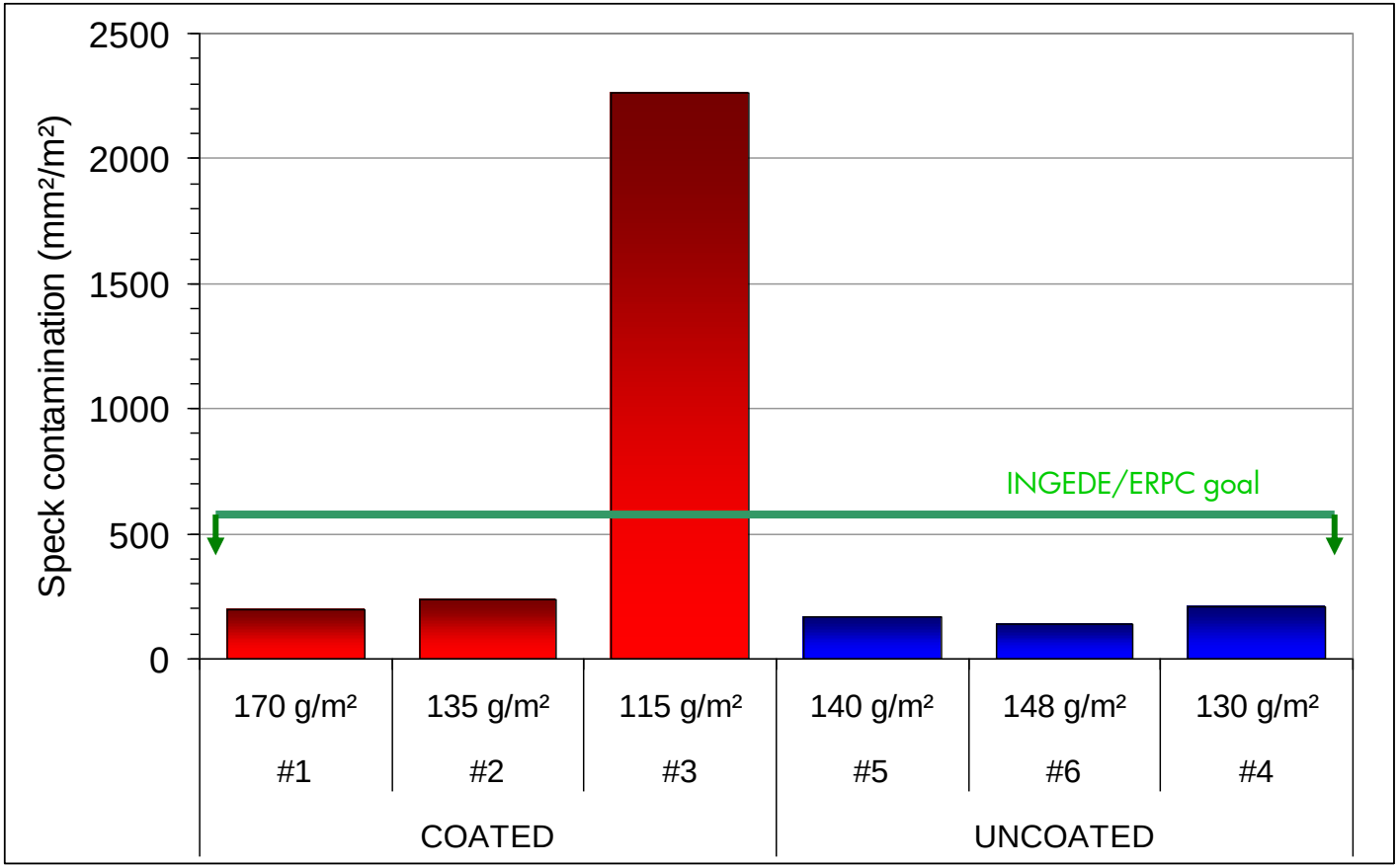
Flotation Cell – Video filmed by CTP Lab, France, 2009

Current HP Indigo ElectroInk (v4.0)

Progressive Profitable Printing

HP Indigo ElectroInk 4.0

Single-Loop Deinkability on 5 out of 6 papers tested



'Specks' on Coated #3:

'Specks' on Coated #1:

Data collected by CTP France, using CTP Single Loop Wood-Free Deinking Test

ctp centre technique du papier

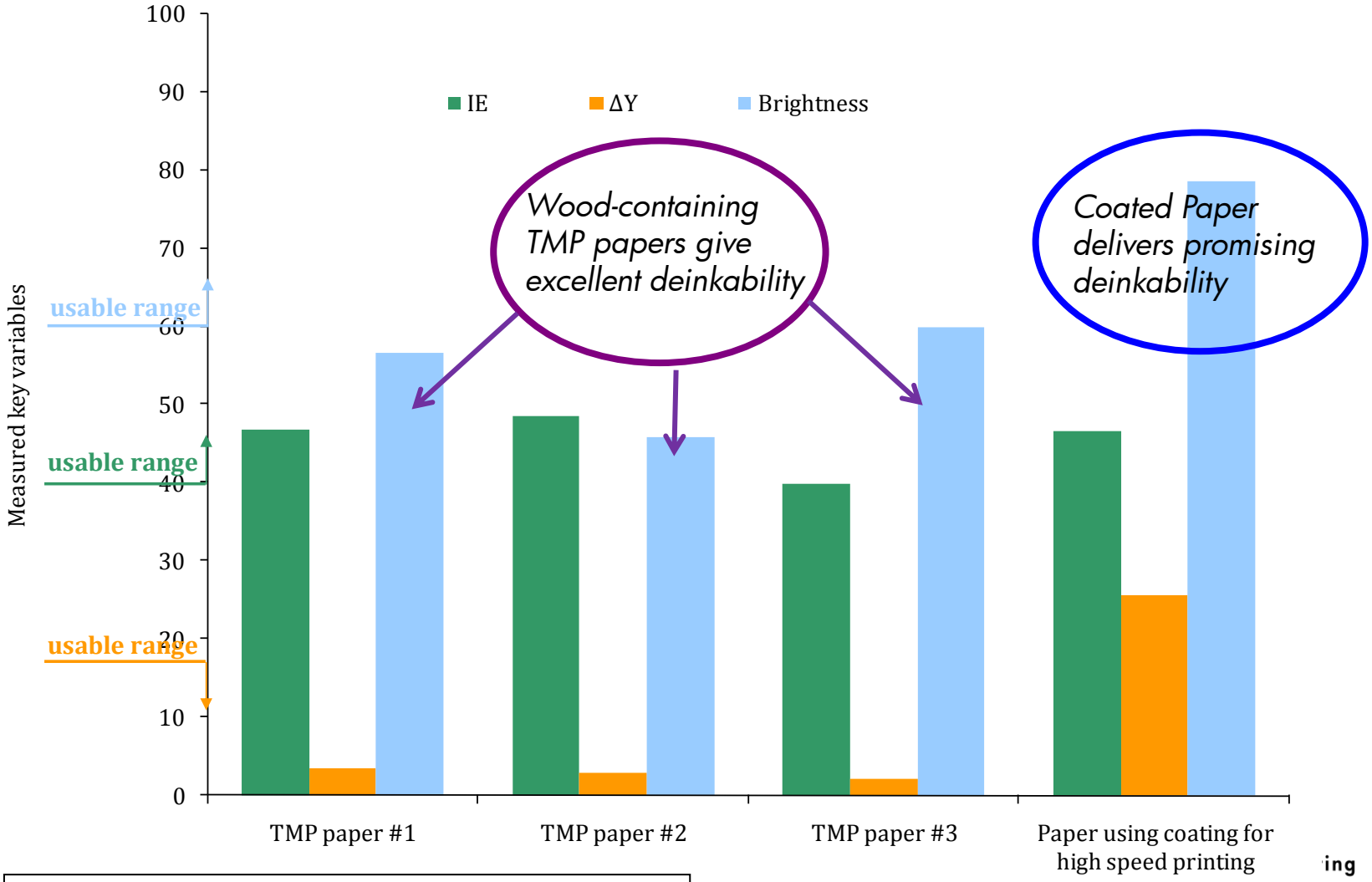
Progressive Profitable Printing

hp

HP Indigo Print Deinkability and Recyclability

- *HP Indigo prints are deinkable and recyclable*
  - Electroink 4.0 (launched in 2004) shows significant improvement in deinkability compared to previous ink generation
  - In 2009 single-loop tests at CTP with HP Electroink 4.0, HP concluded 5 out of 6 papers met general guidelines for deinkability
  - Oct 2009 NewPage paper company Pilot Trial at Western Michigan University successfully deinked mix of HP Indigo prints / standard Officepak furnish; 12 ton Indigo print Mill Trial planned for NewPage deinking mill
  - HP Indigo Israel facilities selling 60+ tons/month HP Indigo prints for recycling
  - HP Indigo presses support 800+ substrates with environmental credentials, many of which include recycled content (30% - 100% PCW)

HP IJ Print Recyclability Research
Promising Deinkability on Range of Papers



Data collected by PTS Germany using 'MM1' conditions (similar to Method 11 but lower pH, and lower shear; pH range before flotation is 8.6 to 8.9)

HP T300 Color Inkjet Web Press
Print Recyclability & Deinkability

- HP pigmented ink showing "promising floatation deinkability"[1]
  - Promising independent test lab results (PTS, Munich) on 4 papers, even w/ nominal INGEDE Method 11 Oleic Acid 'collector' chemistry
  - Industry trends (low shear pulping, lower pH) enhance inkjet pigment deinkability
- Collaboration w/ deinking paper companies will provide robust proof of deinkability at mill-scale
  - Simple lab-scale tests (e.g. INGEDE Method11): limited assessment value
  - HP Labs 'HPES' flotation chemistry: significant promise for digital & analog prints
- Paper design & additives can further enhance inkjet deinkability
  - ColorLok results: "enhanced deinkability (compared to non-ColorLok office papers)" [1]
  - Bonding Agent effects being confirmed using revised test methods

[1] Dr. Elisabeth Hanecker, PTS Deinking Lab, Germany

Bottom line: Put HP Inkjet prints in normal recycling collection bins. HP will ensure ongoing compatibility with recycling industry as volumes increase.