

## Single Fibre Testing

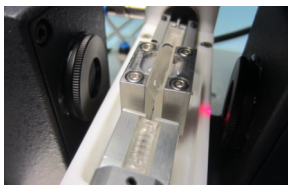
### FTT950 - Fibre Torsion Tester



Measure torsional properties of single hair fibre

- ▶ Hair fibre cuticle layers contribute more to the fibre torsional stiffness than tensile or bending deformations
- ▶ To evaluate cuticle integrity, damage

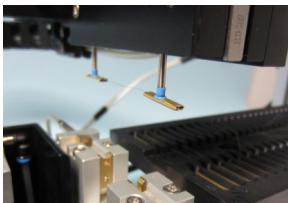
### DSM770 - Dynamic Swelling Module



Measures hair fibre dimensional swelling when immersed in a liquid

- ▶ Fibre dynamic dimensional change
- ▶ Ideal to evaluate hair colouring or relaxers technologies

### ALS1500 - Automated Loading System



Automation platform

- ▶ High throughput hair fibre testing
- ▶ Sample Pick & Place system
- ▶ Enhanced measurements productivity and data quality

## Skin Testing



### Dermal Torque Meter



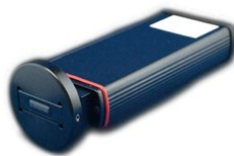
- ▶ Proven method for evaluation of stratum corneum elasticity, hydration & frictional properties
- ▶ Typically supports "moisturisation" and "elasticity" claims

### Torsional Ballistometer



- ▶ Impact method for skin firmness
- ▶ Non-gravity dependent measurement for access to small sites
- ▶ Evaluation of skin anti-ageing products, cellulite, or the quality of wound healing

### Translucency Probe

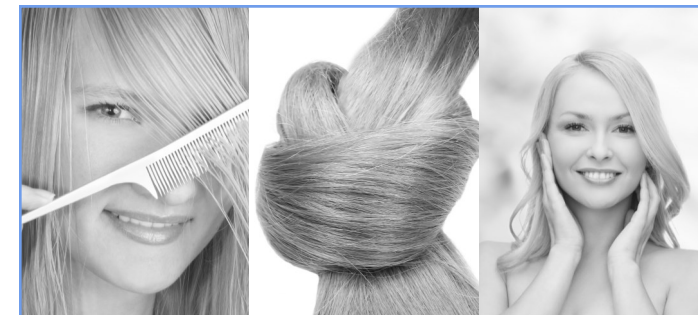


- ▶ Light interacts with the skin structure and pigmentation: absorption and sub-surface scattering
- ▶ Unlike colorimeter, this instrument is not sensitive to surface optical effect and measures how much of the light is absorbed and scattered
- ▶ Supports skin "radiance" or "complexion" claims



## Hair & Skin Testing

### Instrumentation for Personal Care Applications



#### CONTRACT TESTING

Dia-Stron offers hair contract testing services

- ▶ State of the art testing laboratory
- ▶ Studies of all sizes, with a short turnaround time, to the highest testing standards

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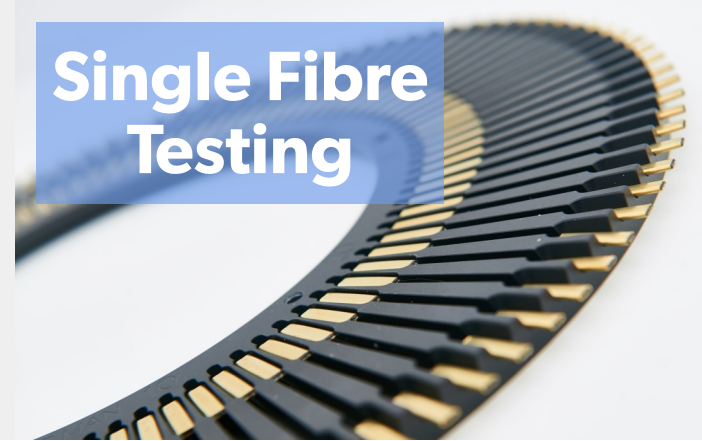
# Hair Tress Evaluation



# MTT175 Accessories



# Single Fibre Testing



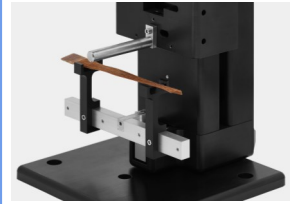
## MTT175 Miniature Tensile Tester



Generic testing instrument for personal care applications

- ▶ All-in-one solution for product testing
- ▶ Widely used measurement methods
- ▶ Cost effective solution

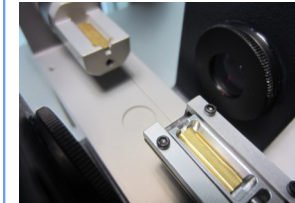
## 3-point Bending accessory



Measures flexural properties

- ▶ Test bending properties of hair tresses
- ▶ To evaluate styling polymers or products
- ▶ For "hold", "flexibility", "stiffness" claims
- ▶ "Humidity resistance" assessment

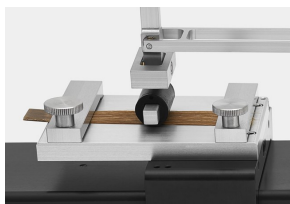
## FDAS770 - Fibre Dimensional Analysis



Measures hair fibre diameter

- ▶ Based on Laser Scanning Micrometer
- ▶ Automated fibre rotation and translation
- ▶ Cross-sectional area calculation
- ▶ To normalise mechanical data (stress)

## Hair Friction accessory



Measures hair friction

- ▶ Bi-directional coefficients of friction
- ▶ Dry or wet testing
- ▶ For "smoothness" related claims
- ▶ Ideal for screening surface actives

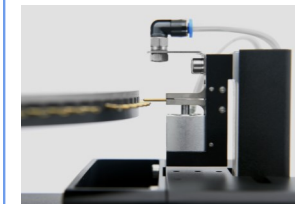
## Tress Volume accessory



Measures volume properties

- ▶ To evaluate body and volume properties of hair tresses treated with shampoos, conditioners, and styling products
- ▶ For "volumising", "volume control", "body" related claims

## MTT690 - Automated Fibre Tensile Tester



Measures hair tensile properties

- ▶ High throughput testing: 100 fibres
- ▶ Automated and consistent
- ▶ Dry or immersed hair fibre samples
- ▶ For "strength", "hydration" or "damage repair" claims

## Combing accessory



Measures hair combing

- ▶ Combing/detangling properties
- ▶ Dry or wet testing
- ▶ For "ease of comb", "detangling" claims
- ▶ Complementary to friction testing

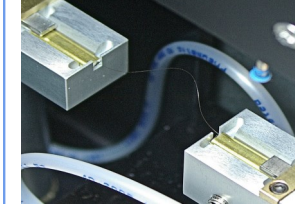
## Tack/Adhesive accessory



Measures product tack, adhesion

- ▶ Tack/adhesion profile of products
- ▶ Extensional rheology: "stringiness"
- ▶ Ideally suited for styling products to assess wet to tacky to dry phase transitions

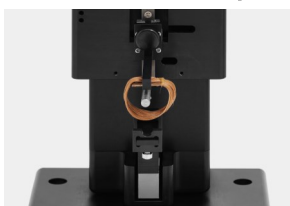
## CYC801 - Cyclic Tester



Measures tensile fatigue properties of hair fibres

- ▶ Tensile cycles until break
- ▶ Realistic simulation of hair grooming
- ▶ Ideal for "breakage resistance" claims
- ▶ To evaluate damage & chemical insults

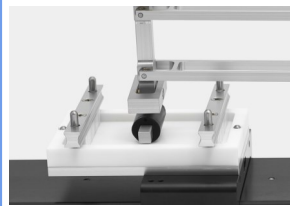
## Hair Curl Compression accessory



Measures hair curl compressibility

- ▶ Stiffness properties of hair curls
- ▶ For styling and wash & care products
- ▶ For "softness", "retention" claims
- ▶ Repeated cycles method

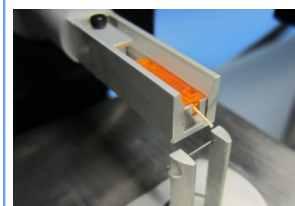
## Substrate Friction accessory



Measures tribological properties

- ▶ Friction properties of sheet materials such as skin replicates
- ▶ Evaluation in immersion or in the dry
- ▶ For "smoothness" claims

## FBS900 - Fibre Bending System



Measures fibre bending properties

- ▶ Fibre flexibility at specify rotation angle
- ▶ Hair movement driven by fibre bending
- ▶ To evaluate impact of treatments on hair structural matrix - KAPs