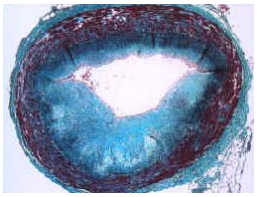
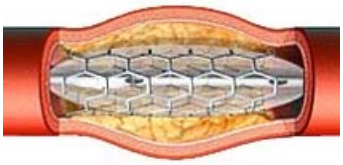
IMI
NRC·CNRC

Shaping the future with you

Research Activities in Balloon Angioplasty





The NRC research group in balloon angioplasty develop leading edge technologies for the balloon angioplasty intervention and the design of related cardiovascular devices.

INFORMATION

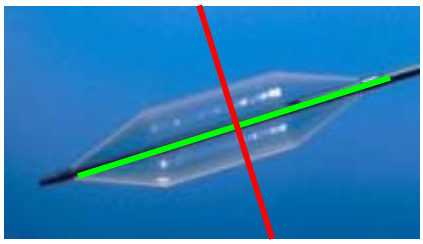
Overview

Innovative tools are being developed to:

- optimise balloon/stent materials and design
- assist the cardiologist in planning the intervention

in order to address the following needs:

- control balloon failure
- balloon/stent miniaturization
- control restenosis and avoid thrombosis



Balloon failure modes

The benefits of membership are:

- competitive advantage on developed technologies
- seminars and web-site access on results of research program
- access to NRC laboratories for prototyping and R&D studies

Research Program

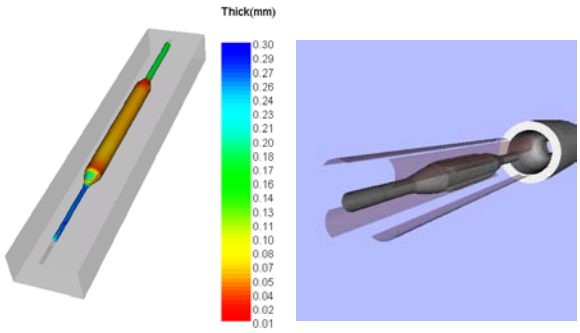
Stronger and smaller balloons

- polymer blends, multilayer and microstructure dependency
- precision micro-extrusion

Biaxial sheet stretcher

Process simulation and prototyping

- prediction of the balloon forming process and folding onto catheter



Balloon forming and folding onto catheter

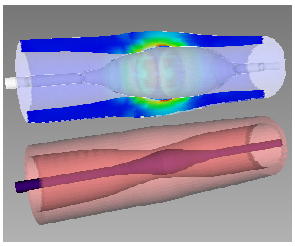
National Research Council Canada
Industrial Materials Institute
Conseil national de recherches Canada
Institut des matériaux industriels
Canada

- design optimization and prototyping for stent and balloon shapes

Prototyping facilities

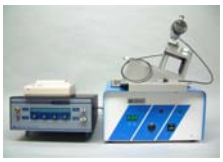
Interventional modelling

- prediction of the angioplasty intervention in virtual 3D and quasi real-time



Deployment within an artery

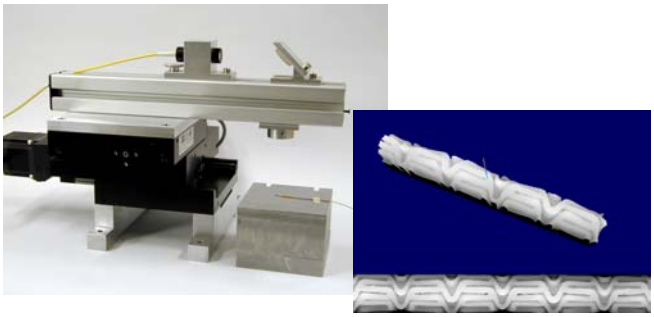
- validation on synthetic materials; animal models for tissue damage, restenosis and thrombosis



Animal and synthetic material validation

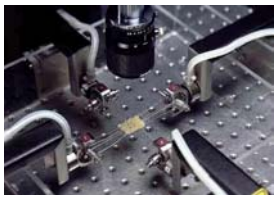
Diagnostics and characterization

- In-vivo/in-situ diagnosis and geometric modelling of personalized arterial morphology



Optical coherence tomography

- elastography characterization of generic and personalized arterial properties



Biaxial stretcher for biological tissue

Industrial membership requires the active participation of the company and the payment of an annual fee.

Medical membership requires the active participation of the hospital or research organization.

For further information, please do not hesitate to contact us.

INFORMATION

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