

**BABAK RADI**

BEng IUT, MEng AUT

**Thesis Title:**

Reinforced Hydrogels for Silicone Copolymer Delivery for Scar Remediation

**Supervisor:**

Professor Graeme George

Associate Professor Peter Fredericks

**Citation:**

Silicone gels are used to reduce the size, redness and itchiness of burn scars and in some cases can lead to dramatic improvements in disfiguring scars. The remediation process takes a very long time (up to 12 month) and QUT researchers have discovered an active silicone agent which is able to dramatically reduce the production of collagen (the reason for scar formation) and offers the promise of an effective and fast-acting therapy.

In this thesis a novel biocompatible delivery system has been devised which is a soft but self-reinforced hydrogel. The full structure and properties of this hydrogel have been determined and the uptake and release of the active silicone has been tailored for optimum delivery to scarred tissue. This material will be available for clinical trials of the active agent.