

Case study number: 02/2011

Project Title: Three dimensional knitted lamp shades

TDL Partner: Nikki Gabriel

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Project Period: July 2010 - July 2011

**Partner Profile:** Nikki Gabriel is a knitwear designer with over twelve years of professional experience. She graduated from RMIT in Melbourne and settled in New Zealand two years ago. Nikki has worked with several high-end fashion brands and now has her own signature label, Nikki Gabriel. She designs and manufactures bespoke yarns, knitwear and knitted products using a wide range of New Zealand based resources including spinning mills, dye houses, hand knitters and machine knitting technology, as well as her own in-house sample dyeing facilities located at her Napier studio. Sustainable processes are a major consideration in the manufacture of her product range.

**Project background:** In mid 2011 Nikki collaborated with Melbourne based lighting company, Lightly, to produce three dimensional seamless knitted lamp shades. Operating from New Zealand, Nikki approached the TDL for assistance with the development of her design and small production runs.

**Project Description:** Nikki's circular seamless lampshade design extends from a wide hanging fringe at the bottom to an elegantly shaped curved top, which is stretched over a metal frame. Nikki's work has a hand knitted style; simple, natural and timeless, and she wanted the shade to compliment this.

**Project Methodology:** Nikki designed the lamp shade shape and emailed PDF images and a specification to the TDL. Gordon Fraser, the TDL's technician, suggested the fringe could be manufactured integrally into the circular shade, rather than adding or linking it onto the edge of the knitted form. Gordon tested various yarns and stitch sizes on the lab's Shima Seiki WholeGarment knitting machine and sent them to Nikki to obtain feedback on the samples. Nikki requested a scalloped edging that was able to be incorporated into the knitting programme. After several additional knit tests, Nikki ordered some 2/28 Nm undyed fine merino/angora yarn for the final lamp shades, that was suitable to knit on the 7 gauge machine. Gordon was able to adapt an existing Shima knit programme from the CAD software database to quickly prepare a programme for knitting, thus saving development time. The process of knitting the blended merino wool lamp shades went smoothly and were subsequently despatched to Nikki, which were then hand dyed to a range of colours in her studio. The lamp shade fringes inevitably tangled during wet processing and consequently needed disentangling by hand.

**Feedback:** The TDL technologies, services and facilities were ideally suited to this project in that the scale, time and run sizes met with Nikki's need for flexibility and quick turnaround. One difficulty that arose was that the yarn that was specified required a minimum order quantity; however Nikki has since used up all the excess in production. Nikki is interested in using the TDL for further developments and production work, which is likely to involve the lab's new intarsia knitting machine and digital printer.

**Conclusion:** Despite the lampshade being more time consuming to hand finish than expected, Nikki was very happy with the look and feel of the final product. Nikki found working with the TDL easy and convenient.



*The finished article – seamless fringed lampshade by Lightly and Nikki Gabriel*