

# Thesis of VK

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# Chapter 1

XXXX

fabricating[1] shallow NV[2] centers has been described[3] in the chapter one[4]. A small drop

copper wire acts as a MW antenna for the MW manipulation of NV spin. The diamond with its liquid crystal coated side facing the copper wire was

xed on the cover glass by applying small amounts of adhesive(Pattex Super glue) on its sides. Another way to produce thin layers of LC

Im on the diamond surface is to use standard spin coating method. But, probably due to the very small size of the substrate (2mm2mm diamond chip), it was dicult to optimize the uniform

$$\omega = (\gamma_e).B_x \quad (1.1)$$

coating of the

Im on diamond. Temperature settings

Here the  $\omega$  whic is b;lahlll..and  $\gamma_e$  which is ano....and so is  $B_x$  also wehrmm ..thanks fabricating shallow NV centers has been described in the chapter one. A small drop of 8CB LC was placed on the diamond surface containing shallow NV centers and allowed to spread over the surface. Due to the hydrophilic nature of the diamond surface, the LC wets the surface and forms a thin layer (in the m range) on the diamond surface. As mentioned above, the 8CB exhibits SA phase starting from 21.5C and hence it appears as a cloudy liquid at room temperature(around 23C). The diamond was then placed on a 170 m microscope cover glass( gure 3.4).



## List of publications

- [1] This is my first paper
- [2] This is my second paper



# Glossary

mag-field. [3](#)

gyromagnetic ratio. [3](#)

Resonance frequency. [3](#)

# Bibliography

- [1] John E. Graebner. *Thermal Conductivity of Diamond*. Ed. by Lawrence S. Pan and Don R. Kania. Boston, MA: Springer US, 1995, pp. 285–318.
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- [3] Vadym N. Mochalin et al. “The properties and applications of nanodiamonds”. *Nature Nanotechnology* 7 (2011). Review Article, p. 11.
- [4] F. P. Bundy et al. “Man-Made Diamonds”. *Nature* 176 (1955), p. 51.