



# GEMaC

Groupe d'Étude  
de la Matière Condensée

## ÉTUDE SPATIO-TEMPORELLE DE MATÉRIAUX À TRANSITION DE SPIN : MODÉLISATION ÉLECTRO-ÉLASTIQUE DANS DES NANOMATÉRIAUX BISTABLES.

Présentée par Monsieur Yogendra SINGH

Spécialité : Physique

Laboratoire : GEMaC

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/**/<!-- /* Font Definitions */@font-face {font-family:Arial; panose-1:2 11 6 4 2 2 2 2 2 4;  
mso-font-charset:0; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-  
signature:-536859905 -1073711037 9 0 511 0;}@font-face {font-family:"Cambria Math";  
panose-1:2 4 5 3 5 4 6 3 2 4; mso-font-charset:0; mso-generic-font-family:auto; mso-font-  
pitch:variable; mso-font-signature:-536870145 1107305727 0 0 415 0;}@font-face {font-  
family:Calibri; panose-1:2 15 5 2 2 2 4 3 2 4; mso-font-charset:0; mso-generic-font-family:  
auto; mso-font-pitch:variable; mso-font-signature:-520092929 1073786111 9 0 415 0;} /*
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Style Definitions \*/p.MsoNormal, li.MsoNormal, div.MsoNormal {mso-style-unhide:no; mso-style-qformat:yes; mso-style-parent:""; margin-top:0cm; margin-right:0cm; margin-bottom:10.0pt; margin-left:0cm; line-height:115%; mso-pagination:none; font-size:11.0pt; font-family:Calibri; mso-ascii-font-family:Calibri; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:Calibri; mso-fareast-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-ansi-language:EN-US; mso-fareast-language:EN-US;}.MsoChpDefault {mso-style-type:export-only; mso-default-props:yes; font-size:11.0pt; mso-ansi-font-size:11.0pt; mso-bidi-font-size:11.0pt; font-family:Calibri; mso-ascii-font-family:Calibri; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:Calibri; mso-fareast-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-ansi-language:EN-US; mso-fareast-language:EN-US;}.MsoPapDefault {mso-style-type:export-only; margin-bottom:10.0pt; line-height:115%; mso-pagination:none;}@page WordSection1 {size:596.0pt 842.0pt; margin:49.0pt 51.0pt 0cm 51.0pt; mso-header-margin:37.45pt; mso-footer-margin:36.0pt; mso-paper-source:0;}div.WordSection1 {page:WordSection1;}@page WordSection2 {size:596.0pt 842.0pt; margin:49.0pt 51.0pt 14.0pt 52.0pt; mso-header-margin:37.45pt; mso-footer-margin:0cm; mso-paper-source:0;}div.WordSection2 {page:WordSection2;}--> /\*\*/ /\*\*/<!-- /\* Font Definitions \*/@font-face {font-family:Arial; panose-1:2 11 6 4 2 2 2 2 4; mso-font-charset:0; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:-536859905 -1073711037 9 0 511 0;}@font-face {font-family:Times; panose-1:2 0 5 0 0 0 0 0 0; mso-font-charset:0; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:3 0 0 0 1 0;}@font-face {font-family:"&#65325;&#65331; &#26126;&#26397;"; mso-font-charset:78; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:-536870145 1791491579 18 0 131231 0;}@font-face {font-family:"Cambria Math"; panose-1:2 4 5 3 5 4 6 3 2 4; mso-font-charset:0; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:-536870145 1107305727 0 0 415 0;}@font-face {font-family:Cambria; panose-1:2 4 5 3 5 4 6 3 2 4; mso-font-charset:0; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:-536870145 1073743103 0 0 415 0;} /\* Style Definitions \*/p.MsoNormal, li.MsoNormal, div.MsoNormal {mso-style-unhide:no; mso-style-qformat:yes; mso-style-parent:""; margin:0cm; margin-bottom:.0001pt; mso-pagination:widow-orphan; font-size:11.0pt; font-family:Cambria; mso-ascii-font-family:Cambria; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:Cambria; mso-fareast-theme-font:minor-latin; mso-hansi-font-family:Cambria; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-fareast-language:EN-US;}.MsoChpDefault {mso-style-type:export-only; mso-default-props:yes; font-size:11.0pt; mso-ansi-font-size:11.0pt; mso-bidi-font-size:11.0pt; font-family:

Cambria; mso-ascii-font-family:Cambria; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:"&#65325;&#65331; &#26126;&#26397;"; mso-fareast-theme-font:minor-fareast; mso-hansi-font-family:Cambria; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-ansi-language:EN-GB; mso-fareast-language:JA;}@page WordSection1 {size:612.0pt 792.0pt; margin:70.85pt 70.85pt 70.85pt 70.85pt; mso-header-margin:36.0pt; mso-footer-margin:36.0pt; mso-paper-source:0;}div.WordSection1 {page:WordSection1;}--> /\*\*/ /\*\*/<!-- /\* Font Definitions \*/@font-face {font-family:Arial; panose-1:2 11 6 4 2 2 2 2 4; mso-font-charset:0; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:-536859905 -1073711037 9 0 511 0;}@font-face {font-family:"&#65325;&#65331; &#26126;&#26397;"; mso-font-charset:78; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:-536870145 1791491579 18 0 131231 0;}@font-face {font-family:"&#65325;&#65331; &#26126;&#26397;"; mso-font-charset:78; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:-536870145 1791491579 18 0 131231 0;}@font-face {font-family:Cambria; panose-1:2 4 5 3 5 4 6 3 2 4; mso-font-charset:0; mso-generic-font-family:auto; mso-font-pitch:variable; mso-font-signature:-536870145 1073743103 0 0 415 0;} /\* Style Definitions \*/p.MsoNormal, li.MsoNormal, div.MsoNormal {mso-style-unhide:no; mso-style-qformat:yes; mso-style-parent:""; margin:0cm; margin-bottom:.0001pt; mso-pagination:widow-orphan; font-size:11.0pt; font-family:Cambria; mso-ascii-font-family:Cambria; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:Cambria; mso-fareast-theme-font:minor-latin; mso-hansi-font-family:Cambria; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-fareast-language:EN-US;}MsoChpDefault {mso-style-type:export-only; mso-default-props:yes; font-size:11.0pt; mso-ansi-font-size:11.0pt; mso-bidi-font-size:11.0pt; font-family:Cambria; mso-ascii-font-family:Cambria; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:"&#65325;&#65331; &#26126;&#26397;"; mso-fareast-theme-font:minor-fareast; mso-hansi-font-family:Cambria; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-ansi-language:EN-GB; mso-fareast-language:JA;}@page WordSection1 {size:612.0pt 792.0pt; margin:70.85pt 70.85pt 70.85pt 70.85pt; mso-header-margin:36.0pt; mso-footer-margin:36.0pt; mso-paper-source:0;}div.WordSection1 {page:WordSection1;}--> /\*\*/

Ci-joint le résumé de la thèse:

**Résumé [PDF - 150,22 Ko]**